CMT-ED1

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E model

- CMT-ED1 is composed of following models.
  As for the service manual, it is issued for each component model, then, please refer to it.

COMPONENT MODEL NAME FOR CMT-ED1

COMPACT DISC DECK RECEIVER SYSTEM	HCD-ED1
ACTIVE SPEAKER SYSTEM	SA-ED1

- Abbreviation
  CND : Canadian model
  EE : East European model
  MY : Malaysian model
  SP : Singapore model
  HK : Hong Kong model

SPECIFICATIONS

General

Power requirements: US, Canadian models: 120 V AC, 60 Hz; AEP, UK, East European, CIS models: 230 V AC, 50/60 Hz; Other models: 110 – 120 V or 220 – 240 V AC, 50/60 Hz adjustable with voltage selector

Power consumption: 60 W

Supplied accessories

AM bar aerial (1)
FM wire aerial (1)
Remote RM-SED1 (1)
Sony SUM-3 (NS) batteries (2)
Speaker grille net (1)
Stabilizer (1)

Design and specifications are subject to change without notice.

PARTS LIST

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-501-659-11	ANTENNA (FM)	(US, CND, MY, SP, HK)
	1-501-985-11	LEAD, ANTENNA (FM)	(AEP, UK, EE, CIS)
	3-860-292-11	MANUAL, INSTRUCTION (ENGLISH)	(AEP, UK, EE, CIS)
	3-860-292-21	MANUAL, INSTRUCTION (FRENCH, SPANISH, PORTUGUESE)	(AEP)
	3-860-292-31	MANUAL, INSTRUCTION (GERMAN)	(AEP)
	3-860-292-41	MANUAL, INSTRUCTION (DUTCH,ITALIAN)	(AEP)
	3-860-292-51	MANUAL, INSTRUCTION (DANISH, FINNISH, SWEDISH)	(AEP)
	3-860-292-61	MANUAL, INSTRUCTION (RUSSIAN, POLISH)	(EE, CIS)
	3-860-293-11	MANUAL, INSTRUCTION (CZECH)	(EE)
	3-860-293-31	MANUAL, INSTRUCTION (TURKISH)	(EE)
	3-860-294-11	MANUAL, INSTRUCTION (ENGLISH)	(US, CND, MY, SP, HK)
	3-860-294-21	MANUAL, INSTRUCTION (FRENCH)	(CND)
	3-860-294-31	MANUAL, INSTRUCTION (FRENCH, SPANISH)	(MY, SP, HK)
	3-860-294-41	MANUAL, INSTRUCTION (CHINESE)	(MY, SP, HK)
	4-979-371-11	COVER,BATTERY (for RM-SED1)	
	4-997-344-01	CLOTH FRAME ASSY (BLUE)	
	8-917-608-90	REMOTE COMMANDER (RM-SED1)	
	X-4949-322-1	STABILIZER ASSY	
	X-4949-451-1	AM ANT SUB ASSY	

COMPACT COMPONENT STEREO SYSTEM

SONY®

MICROFILM

9-922-703-11
(SP)

Sony Corporation
Home A&V Products Company

97I1692-1
Printed in Japan ©1997.9 Published by General Engineering Dept.
(Shibaura)

HCD-ED1A

SERVICE MANUAL

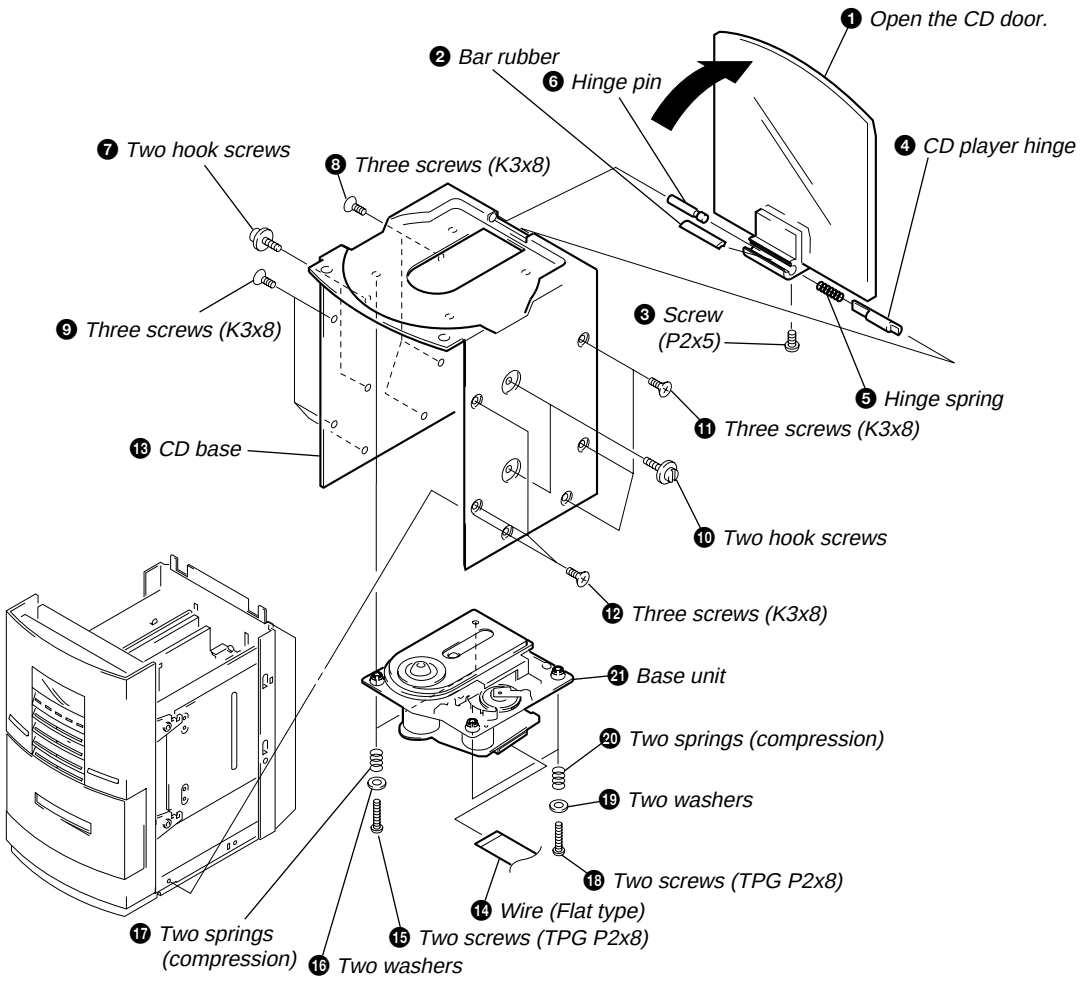
AEP Model
UK Model
E Model

- This service manual and table of repair parts list only the differences with the HCD-ED1.
  When performing repairs, refer to both the HCD-ED1 service manual and table of repair parts (9-922-706-XX).

DIFFERENCE TABLE

Page	HCD-ED1	HCD-ED1A
6	HCD-ED1A	

2-1. CD DOOR, CD BASE AND BASE UNIT



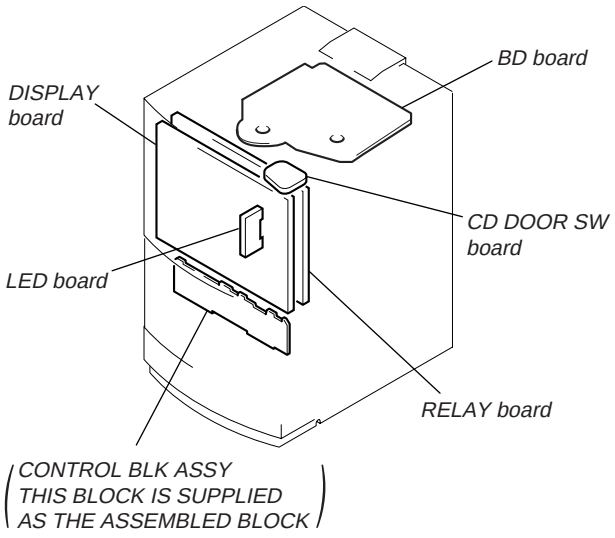
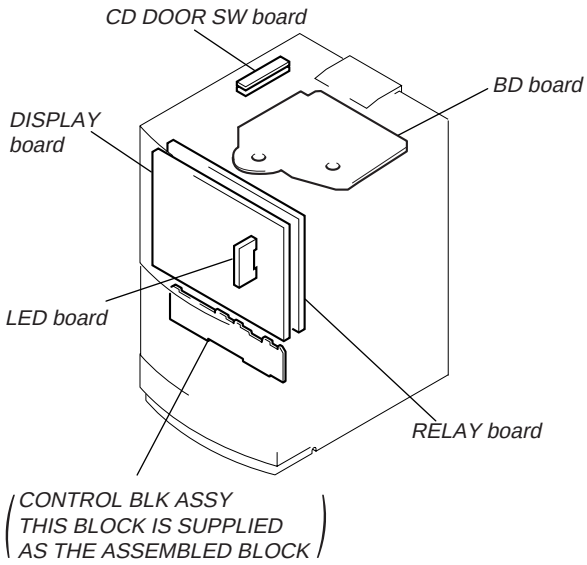
COMPACT DISC DECK RECEIVER

MICROFILM

MC-Service

SONY®

DIFFERENCE TABLE

<table>
<tr><th>Page</th><th>HCD-ED1</th><th>HCD-ED1A</th></tr>
<tr><td>13</td><td> 
</td><td> 
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 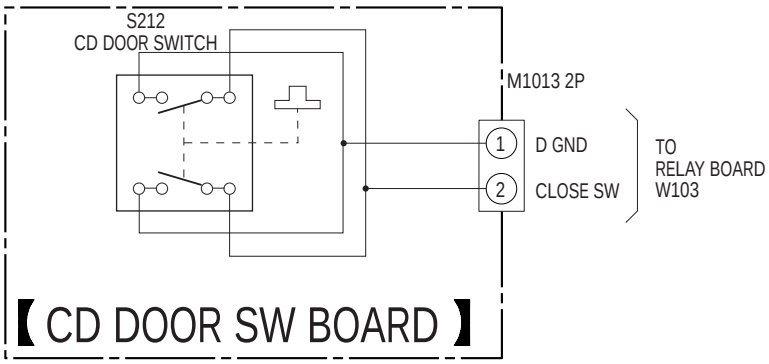
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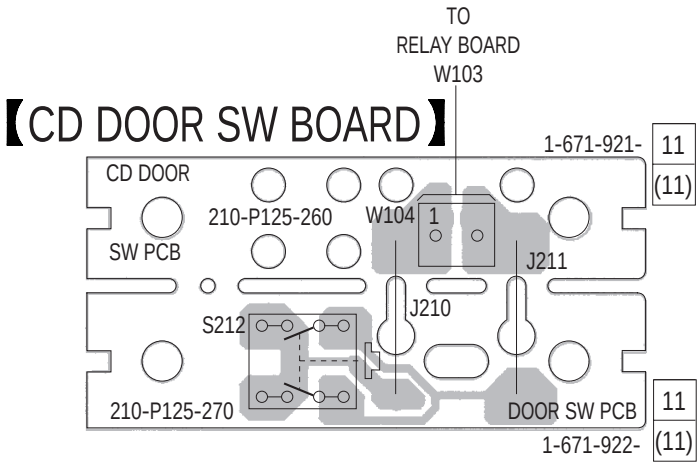
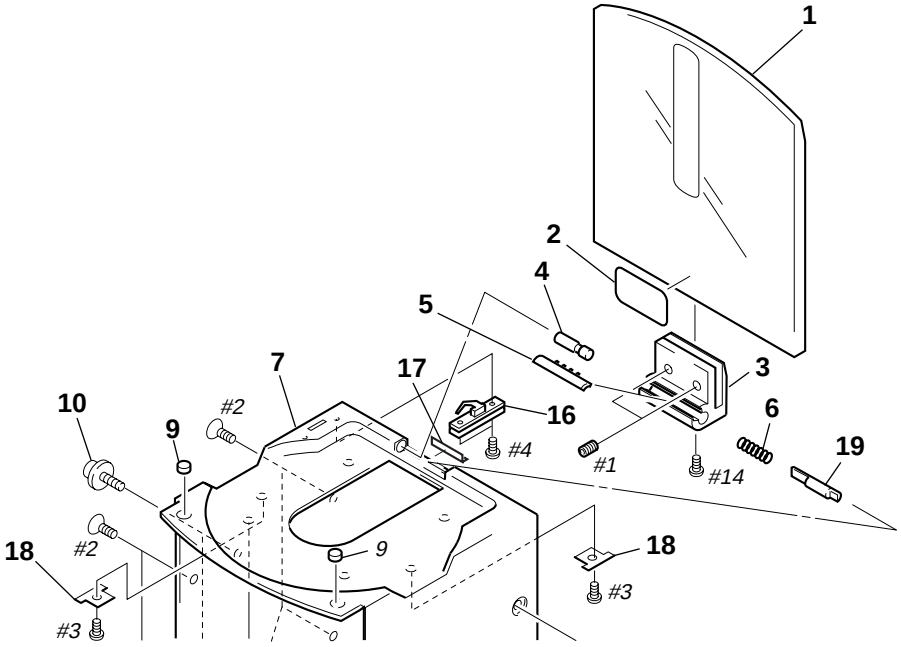
<tr><td>35</td><td colspan="2"> 
</td></tr>
</table>

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Abbreviation
  EE : East European model
  HK : Hong Kong model
  SP : Singapore model
  MY : Malaysia model

Page	HCD-ED1				HCD-ED1A			
45	Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
			EXPLODED VIEW				***EXPLODED VIEW***	
	1	4-997-375-01	GLASS DOOR W/PRINGING		1	4-214-091-01	GLASS DOOR W/PRINGING	
	3	4-997-355-01	DOOR HINGE		3	4-214-085-01	DOOR HINGE	
	4	4-997-365-01	HINGE PIN		4	4-214-088-01	HINGE PIN	
	5	4-997-370-01	BAR RUBBER		5	4-214-090-01	BAR RUBBER	
	6	4-997-356-01	HINGE SPRING		6	4-214-086-01	HINGE SPRING	
	7	4-997-349-01	CD BASE		7	4-214-084-01	CD BASE	
	* 16	A-4407-244-A	CD DOOR SW BOARD, COMPLETE		* 16	A-4417-329-A	CD DOOR SW BOARD, COMPLETE	
	17	4-977-376-01	STOP SPRING		17	4-214-956-01	STOP SPRING	
	18	4-977-371-01	STOPPER		18	4-997-371-01	STOPPER	
		NOT USED			19	4-214-092-01	CD PLAYER HINGE	
								
46	* 53	4-997-368-11	REAR PANEL (AEP)		* 53	4-214-094-01	REAR PANEL (AEP)	
	* 53	4-997-368-21	REAR PANEL (UK)		* 53	4-214-095-01	REAR PANEL (UK)	
	* 53	4-997-368-31	REAR PANEL (EE,CIS)		* 53	4-214-089-01	REAR PANEL (EE,CIS)	
	* 53	4-997-368-51	REAR PANEL (MY,SP)		* 53	4-214-097-01	REAR PANEL (MY,SP)	
	* 53	4-997-368-61	REAR PANEL (HK)		* 53	4-214-096-01	REAR PANEL (HK)	
47	111	4-997-357-01	GEAR HOLDER		111	4-214-087-01	GEAR HOLDER	
51			***ELECTRICAL PARTS LIST***				***ELECTRICAL PARTS LIST***	
	*	A-4407-244-A	CD DOOR SW BOARD, COMPLETE		*	A-4417-329-A	CD DOOR SW BOARD, COMPLETE	
			**********				**********	
	S211	1-771-298-11	SWITCH, PUSH (CD DOOR)		S211	1-771-264-11	SWITCH, PUSH (CD DOOR)	
58			***HARDWARE LIST***				***HARDWARE LIST***	
		NOT USED			#14	7-621-283-00	+P2x5	

HCD-ED1

SERVICE MANUAL

Ver 1.1 2001. 06
With SUPPLEMENT-1
(9-922-706-81)

US Model
Canadian Model
AEP Model
UK Model
E Model

HCD-ED1 is the tuner, deck, CD and amplifier section in CMT-ED1.

This stereo system is equipped with the Dolby* B-type noise reduction system.

*Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol ◻◻ are trademarks of Dolby Laboratories Licensing Corporation.

CD SECTION	Model Name Using Similar Mechanism	NEW
	Base Unit Type	BU17-BD19
	Optical Pick-up Type	KSS-213BA/S-N
TAPE DECK SECTION	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	CMAL2Z076A

SPECIFICATIONS

For the U.S. model

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 4 ohm loads, both channels driven, from 90 – 15,000 Hz; rated 15 watts per channel minimum RMS power, with no more than 0.9% total harmonic distortion from 250 milliwatts to rated output.

Amplifier section

Continuous RMS power output
Canadian model : 15 + 15 watts (4 ohms at 1 kHz, 0.9% THD)
US, Hong Kong, Singapore, Malaysia models : 15+15 watts (4 ohms at 1kHz, 5% THD)
AEP, UK, East European, CIS models : 17 + 17 watts (4 ohms at 1 kHz, 10% THD)
Music power output (AEP, UK, East European, CIS models) 22 + 22 watts
Peak music power output (EXCEPT US, Canadian, AEP, UK, East European, CIS models) 280 watts
DIN power output (AEP, UK, East European, CIS models) 15 + 15 watts (6 ohms at 1 kHz, DIN)

Inputs
MD IN (phono jacks) : sensitivity 450 mV, impedance 47 kilohms

Outputs
MD OUT (phono jacks) : sensitivity 250 mV, impedance 1 kilohm

PHONES (stereo phone jack) : accepts headphones of 8 ohms or more
SPEAKER : active speaker system, 4 ohms

CD player section

System: Compact disc and digital audio system
Laser: Semiconductor laser (λ=780 nm)
Emission duration: continuous
Laser output: Max. 44.6μW*
*This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Wavelength: 780 – 790 nm
Frequency response: 2 Hz – 20 kHz (±0.5 dB)
AEP, UK, East European, CIS models :
Signal-to-noise ratio: More than 90 dB
AEP, UK, East European, CIS models :
Dynamic range: More than 90 dB

Tape player section

Recording system: 4-track 2-channel stereo
Frequency response (DOLBY NR OFF): 50 – 13,000 Hz (±3 dB), using a Sony TYPE I cassette
50 – 14,000 Hz (±3dB), using a Sony TYPE II cassette

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range: 87.5 – 108.0 MHz
Antenna: FM wire antenna
Antenna terminals: 75 ohm unbalanced
Intermediate frequency: 10.7 MHz

AM tuner section

Tuning range
US, Canadian models: 530–1,710 kHz (with the tuning interval set at 10 kHz)
531–1,710 kHz (with the tuning interval set at 9 kHz)
AEP, UK, East European, CIS models:
531–1,602 kHz (with the tuning interval set at 9 kHz)
Other models: 530–1,710 kHz (with the tuning interval set at 10 kHz)
531–1,602 kHz (with the tuning interval set at 9 kHz)
Antenna: AM bar antenna, External antenna terminal
Intermediate frequency: 450 kHz

— Continued on next page —

COMPACT DISC DECK RECEIVER

MC-Service

9-922-706-12
2001F0200-1
© 2001.6

Sony Corporation
Home Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

General

Power requirements	US, Canadian models: 120 V AC, 60 Hz AEP, UK, East European, CIS models : 230 V AC, 50/60 Hz Other models: 110 – 120 V or 220 – 240V AC, 50/60 Hz adjustable with voltage selector
Power consumption	60 watts
Dimensions (w/h/d)	Approx. 127 × 212 × 184 mm (5 × 8 3/8 × 7 1/4 in) incl. projecting parts and controls
Mass	Approx. 3.6 kg (7 lb 15 oz)

Design and specifications are subject to change without notice.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

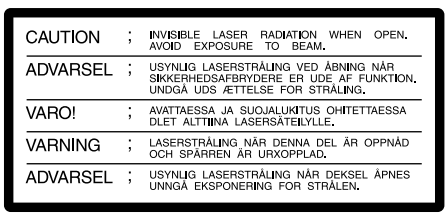
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.


CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL ; USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
VARNING ; LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÅD OCH SPÄRREN ÄR URXOPPLAD.
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

This caution label is located inside the unit.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:
Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth Ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

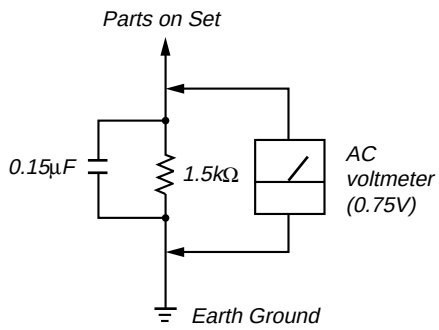


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SERVICING NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

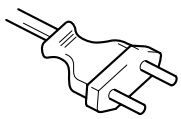
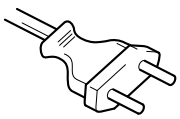
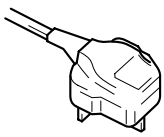
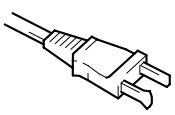
NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

To change the AM tuning interval

The AM tuning interval is factory-preset to 9 kHz (10 kHz in some areas). To change the AM tuning interval to 10 kHz (or 9 kHz), tune in any AM station first, then turn off the power. While holding down TUNING +, turn the power back on. When you change the interval, the AM preset stations will be erased. To reset the interval, repeat the same procedure.

MODEL IDENTIFICATION
— AC POWER SUPPLY CODE —

AEP, East European, CIS model  (Without voltage selector)
Singapore, Malaysia, Hong Kong model  (With voltage selector)
UK model 
US, Canadian model 

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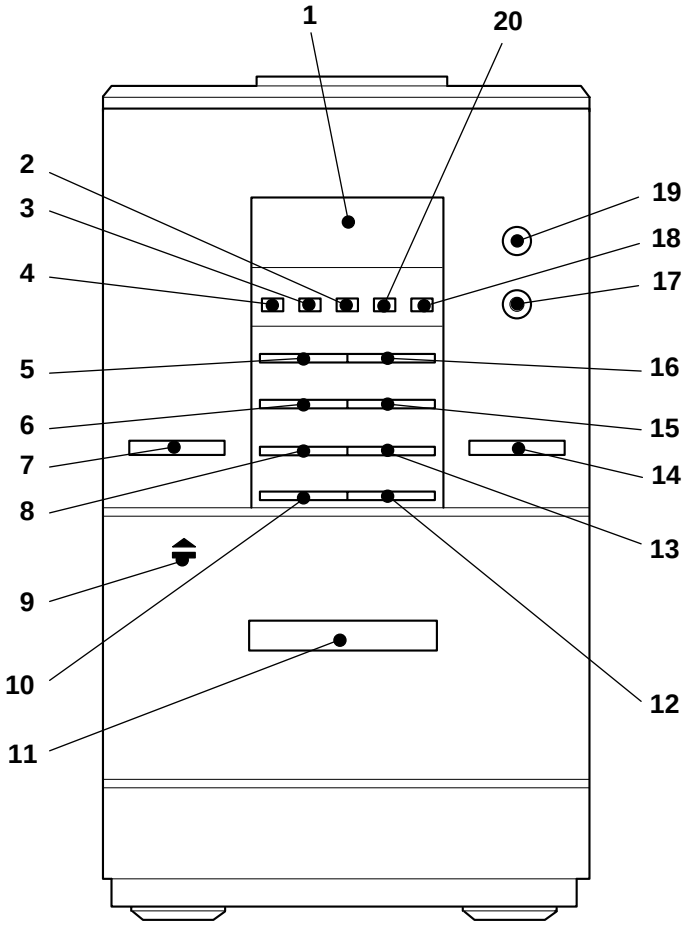
SECTION 1
GENERAL

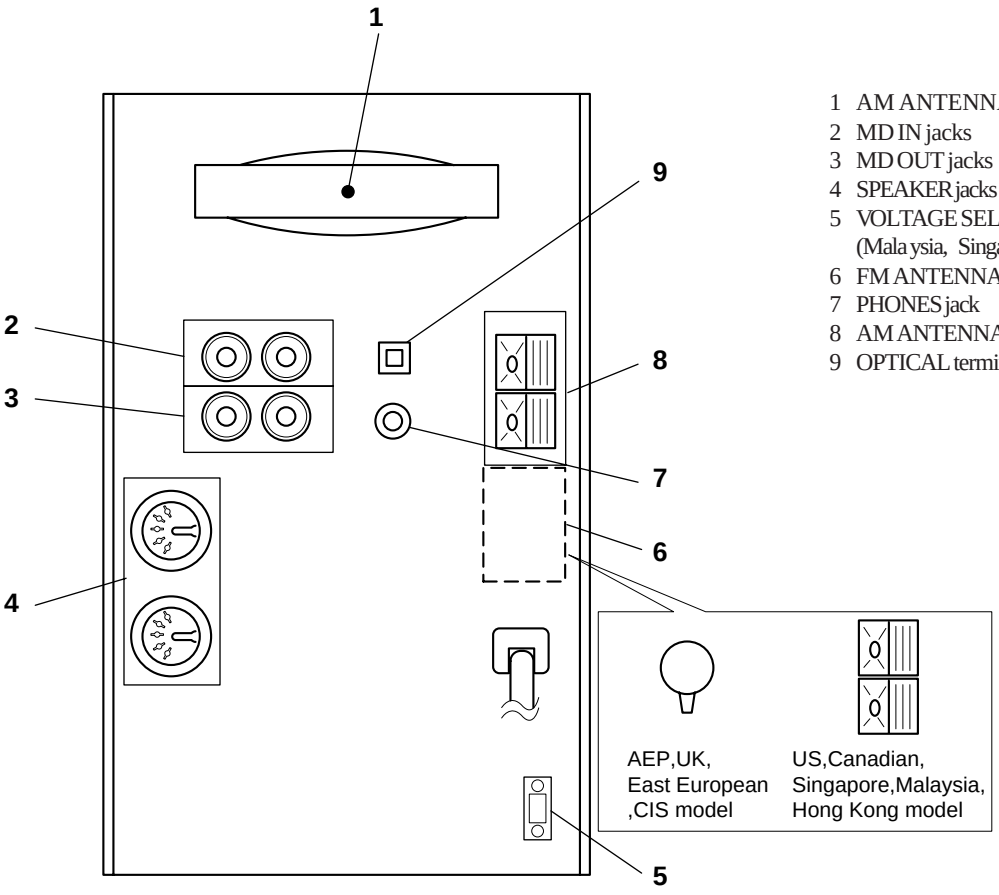
Location of Parts and Controls

FRONT PANEL



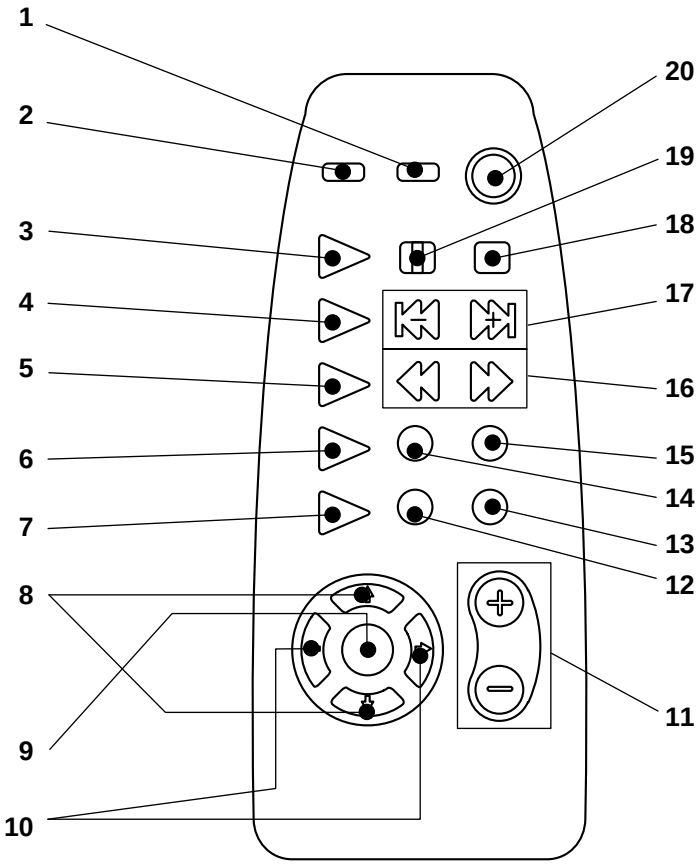
1 Displa ywindo w
2 DBFB lamp
3 CD SYNC lamp
4 REC lamp
5 ≺ button
6 BAND FM ∏ button
7 POWER b utton
8 TUNING ≠ ≺≺ – b utton
9 ≙ button (Push open)
10 VOLUME – b utton
11 DECK Lid
12 VOLUME + b utton
13 TUNING ⊳⊳± + b utton
14 FUNCTON b utton
15 BAND AM π button
16 ⊳ button
17 SOUND MODE b utton
18 WIDE lamp
19 Remote sensor
20 NEAR F. lamp

REAR PANEL



1 AM ANTENNA
2 MD IN jacks
3 MD OUT jacks
4 SPEAKER jacks
5 VOLTAGE SELECT OR s witc h
(Mala ysia, Singapore , Hong K ong models onl y)
6 FM ANTENNA terminal
7 PHONES jack
8 AM ANTENNA terminals
9 OPTICAL terminal

REMOTE

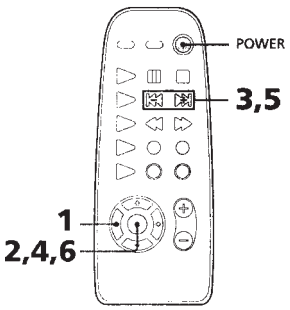


1 DISPLAY button
2 DBFB button
3 CD button
4 TUNER/BAND button
5 TAPE ◀▶ button
6 DIR MODE button
7 CD REPEAT button
8 / buttons
9 ON/OFF button
10 / buttons
11 VOL (+/–) button
12 STEREO/MONO button
13 TUNING/PLAY MODE button
14 DOLBY NR button
15 ● REC button
16 / wind/fast forward) buttons
17 / AMS* buttons
18 stop) button
19 pause) button
20 POWER switch

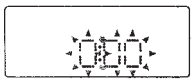
*AMS=Auto Music Sensor

Step 2: Setting the time

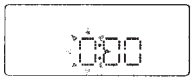
You must set the time before using the timer functions.



1 Press TIMER SET.
The clock of the display begins flashes. When "DAILY" or "TIMER REC" appears, press ⏮/⏭ repeatedly so that it disappears.

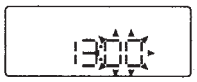


2 Press ENTER.
The hour indication flashes.

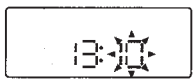


3 Press ⏮/⏭ to set the hour.
The clock uses the 24 -hour system.

4 Press ENTER.
The minute indication flashes.



5 Press ⏮/⏭ to set the minutes.



6 Press ENTER.
The clock starts working.

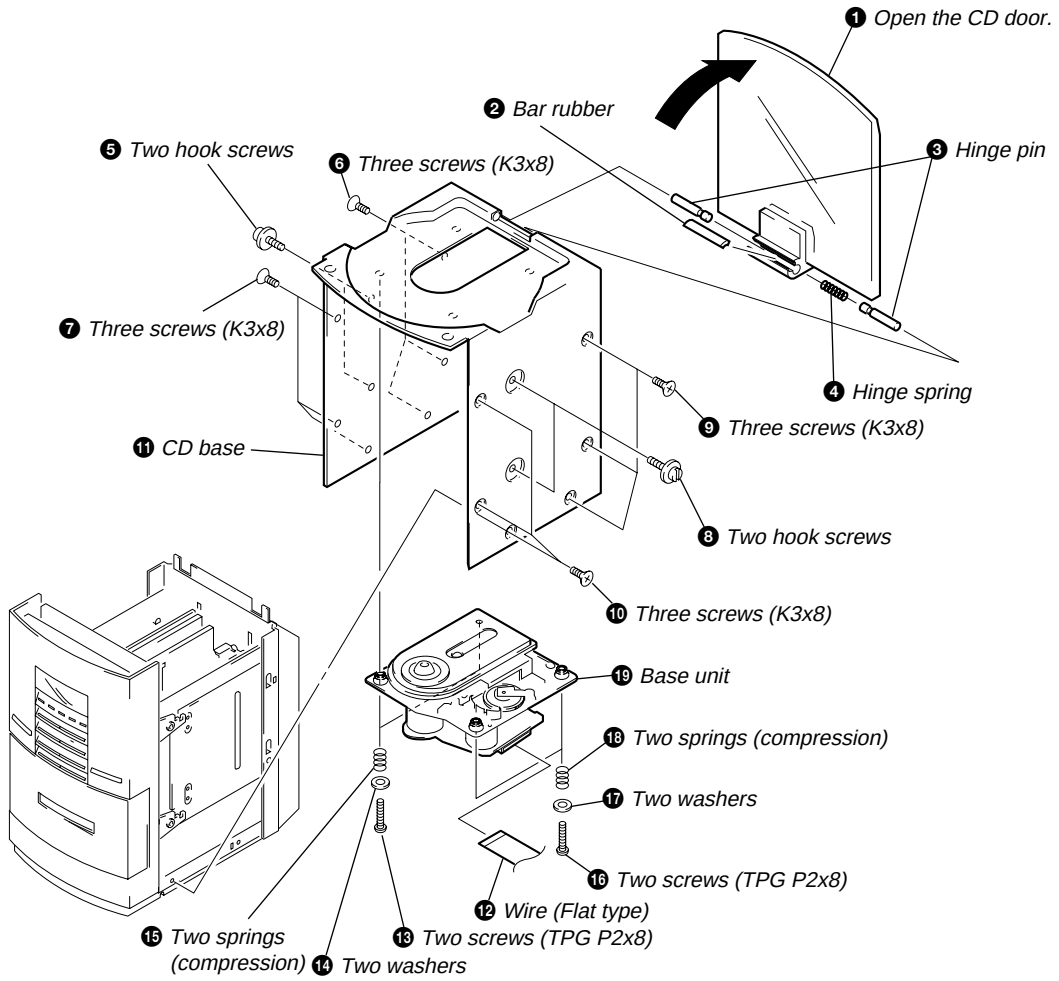
Tip
If you make a mistake, start over from step 1.

This section is extracted from instruction manual.

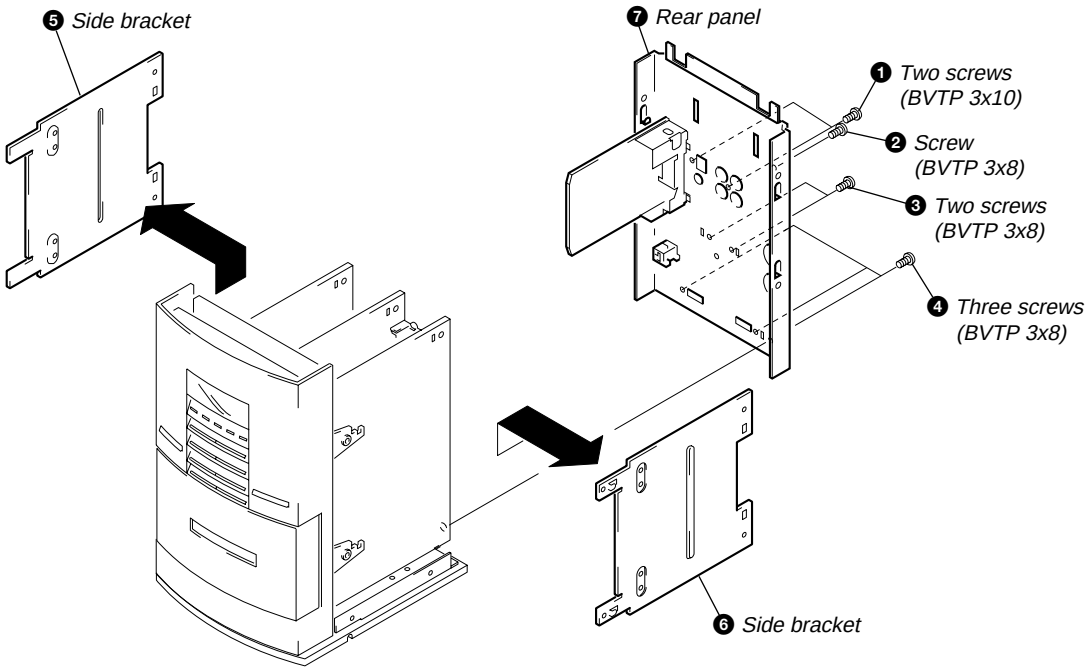
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

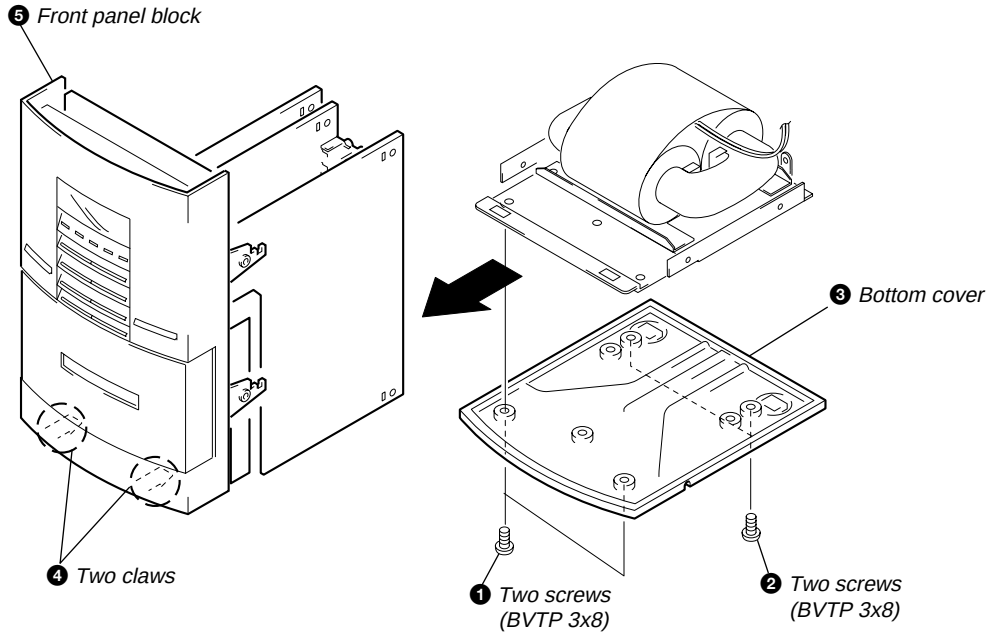
2-1. CD DOOR, CD BASE AND BASE UNIT



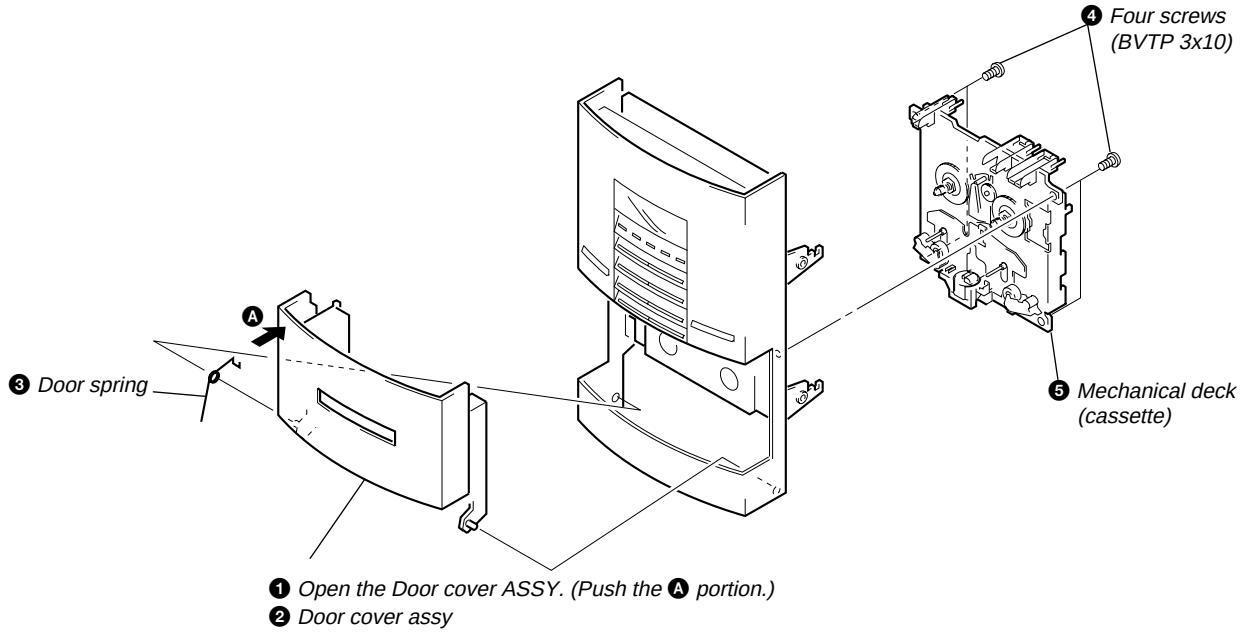
2-2. REAR PANEL


❶ Two screws (BVTP 3x10)
❷ Screw (BVTP 3x8)
❸ Two screws (BVTP 3x8)
❹ Three screws (BVTP 3x8)
❺ Side bracket
❻ Side bracket
❼ Rear panel

2-3. BOTTOM COVER AND FRONT PANEL BLOCK



2-4. DOOR COVER ASSY AND MECHANICAL DECK (CASSETTE)



SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab :
   record/playback heads — pinch rollers
   erase head — rubber belts
   capstan — idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	28 to 71g • cm (0.39 – 0.99 oz • inch)
FWD back tension	CQ-102C	1 to 7g • cm (0.01 – 0.10 oz • inch)
REV	CQ-102RC	28 to 71g • cm (0.39 – 0.99 oz • inch)
REV back tension	CQ-102RC	1 to 7g • cm (0.01 – 0.10 oz • inch)
FF/REW	CQ-201B	56 to 122g • cm (0.78 – 1.69 oz • inch)
FWD tension	CQ-403A	100g or more (3.53 oz or more)
REV tension	CQ-403R	100g or more (3.53 oz or more)

SECTION 4
ELECTRICAL ADJUSTMENTS

DECK SECTION **0 dB=0.775V**

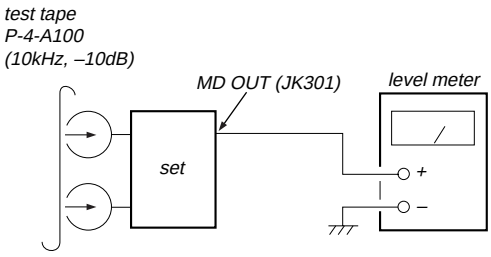
1. Demagnetize the record/playback head with a head damagnetizer. (Do not bring the head demagnetizer close to the erase head.)
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjusted.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-ch.
7. Switches and controls should be set as follows unless otherwise specified.

Tape	Signal	Used for
P-4-A100	10 kHz, –10 dB	Azimuth Adjustment
WS-48B	3 kHz, 0 dB	Tape Speed Adjustment
P-4-L300	315 Hz, 0 dB	Level Adjustment

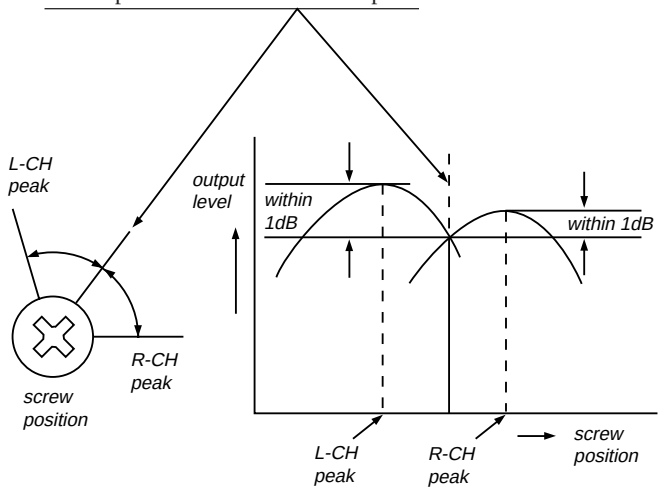
Record/Playback Head Azimuth Adjustment

Procedure :

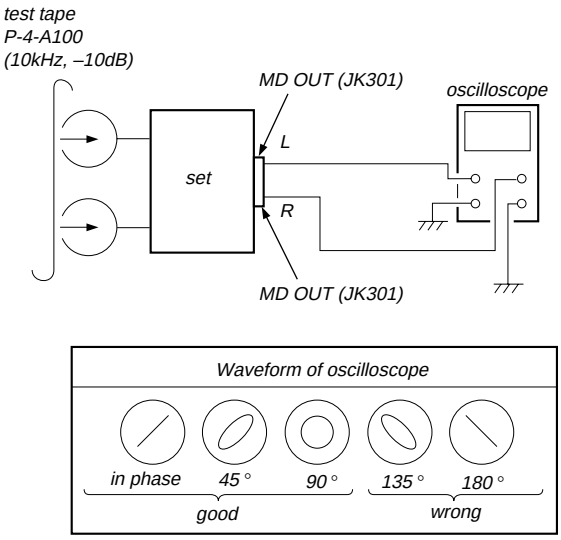
1. Mode : Playback



2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.

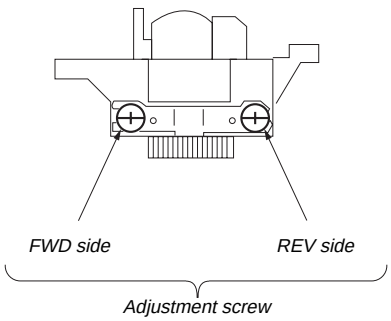


3. Mode : Playback



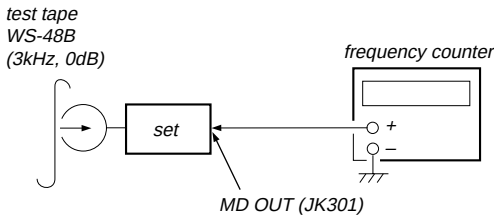
4. After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Location :



Tape Speed Adjustment

Procedure :
Mode : Playback



1. Insert the WS-48B into the deck, and playback.
2. Adjust the VR770/RELAY board so that the frequency counter reading becomes 3000 ± 90 Hz.

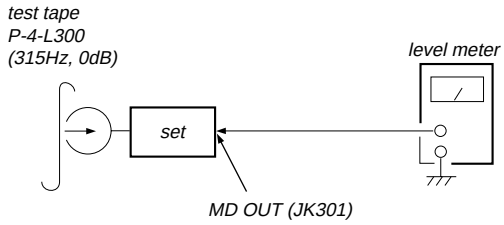
Adjustment Location : RELAY board

Sample Value of Wow and flutter

W.RMS (JIS) less than 0.3%
(test tape: WS-48B)

Playback Level Adjustment

Procedure :
Mode : Playback

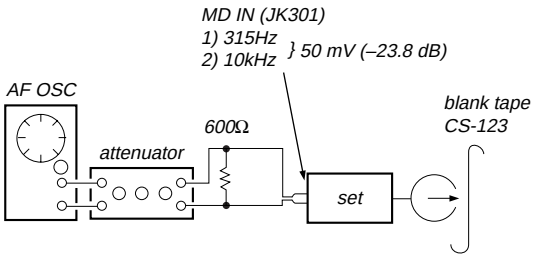


Deck is VR703 (L-CH) and VR704 (R-CH)
so that adjustment within the following adjustment level.

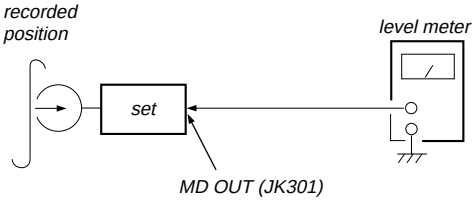
Adjustment level :
Playback level: 301.5 to 338.3 mV (–8.2 to –7.2 dB) level difference between the channels: within ±0.5 dB
Adjustment Location : TAPE PREAMP board

Record Bias Adjustment

Procedure :
1. Mode : Record



2. Mode : Playback

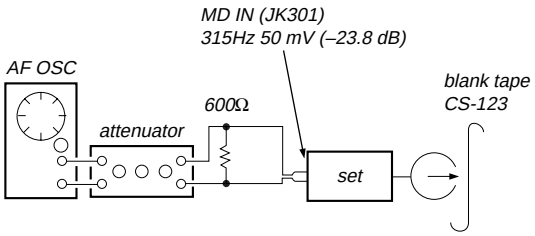


Confirm playback the signal recorded in step 1 become adjustment level as follows.
If these levels do not adjustment level, adjustment the VR701 (L-CH) and VR702 (R-CH) on the TAPE PREAMP board to repeat steps 1 and 2.

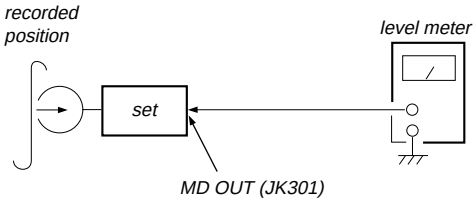
Adjustment level : Playback output of 10kHz level diffrence against 315Hz reference should be ±0.5 dB.
Adjustment Location : TAPE PREAMP board

Record Level Adjustment

Procedure :
1. Mode: Record



2. Mode: Playback

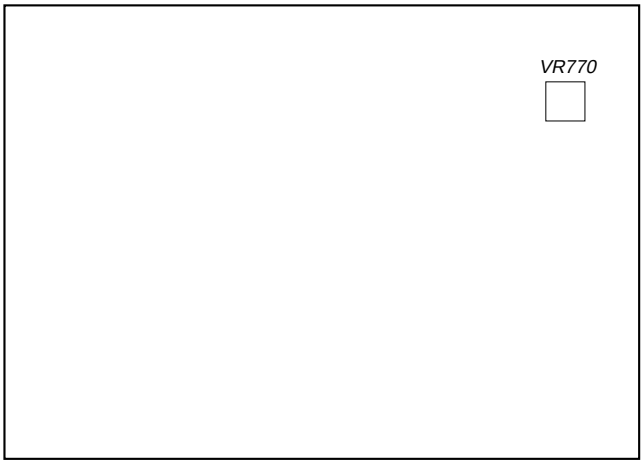


Confirm playback the signal recorded in step 1 become adjustment level as follows.
If these levels do not adjustment level, adjustment the VR705 (L-CH) and VR706 (R-CH) on the TAPE PREAMP board to repeat steps 1 and 2.

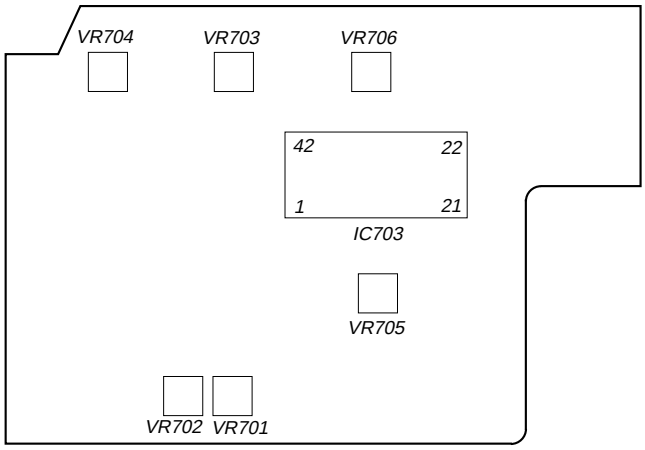
Adjustment level :
Playback level : 47.2 to 53.0 mV (–24.3 to –23.3 dB)
Adjustment Location : TAPE PREAMP board

Adjustment Location

[RELAY BOARD] (Component Side)



[TAPE PREAMP BOARD] (Component Side)

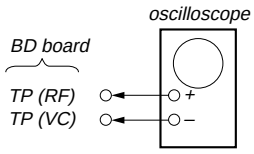


CD SECTION

Note:

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with lens cleaning liquid when the signal level is low than specified value with the following checks.
5. Adjust the focus bias adjustment when optical block is replaced.

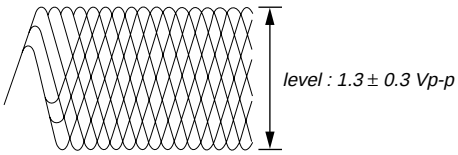
Focus Bias Adjustment



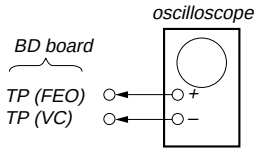
Procedure:

1. Connect oscilloscope to test point TP (RF).
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Adjust RV101 so that the waveform is clear.
   (Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.)
5. After adjustment, check the RF signal level.

• RF signal
VOLT/DIV: 200 mV
TIME/DIV: 500 nS



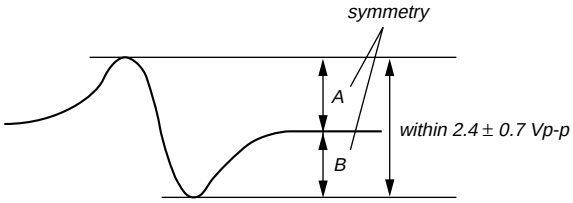
S Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FEO).
2. Connect between test point TP (FOK) and Ground by lead wire.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 2.4 ± 0.7 Vp-p.

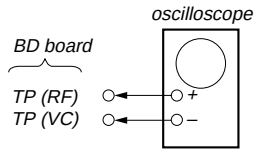
S-curve waveform



6. After check, remove the lead wire connected in step 2.

Note: • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

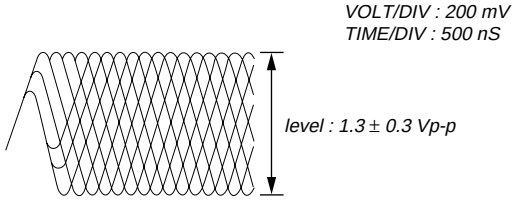


Procedure :

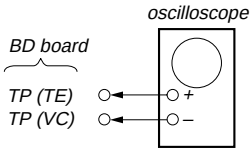
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note: Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

RF signal waveform



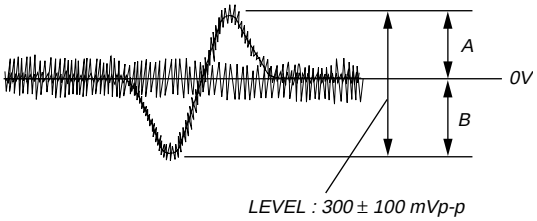
E-F Balance (1 Track Jump) Check (Without remote commander)



Procedure :

1. Connect oscilloscpe to test point TP (TE) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Press the "❚❚ (Pause)" button. (Becomes the 1 track jump mode)
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.

1 track jump waveform



Specified level: • $\frac{A - B}{2 (A + B)}$ x 100 = less than ± 7%

• A + B = 300 ± 100 mVp-p

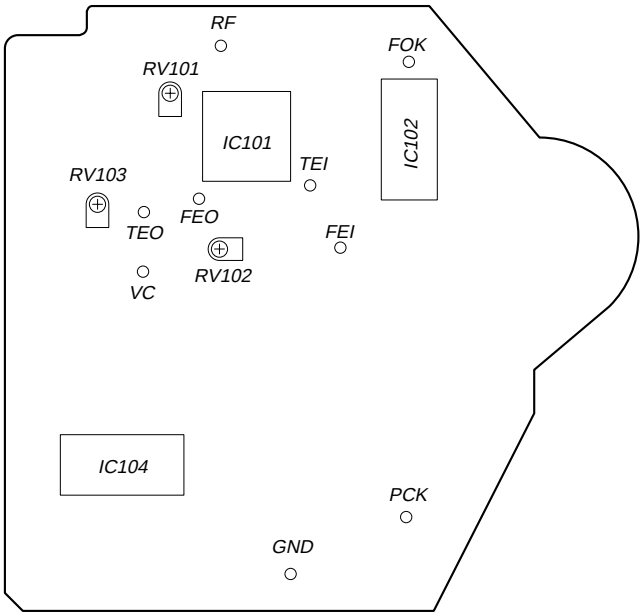
6. Remove the lead wire connected in step 1.

Focus/Tracking Gain Adjustment (RV102, RV103)

This gain has a margin, so even if it is slightly off.
There is no problem.
Therfore, do not perform this adjustment.
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

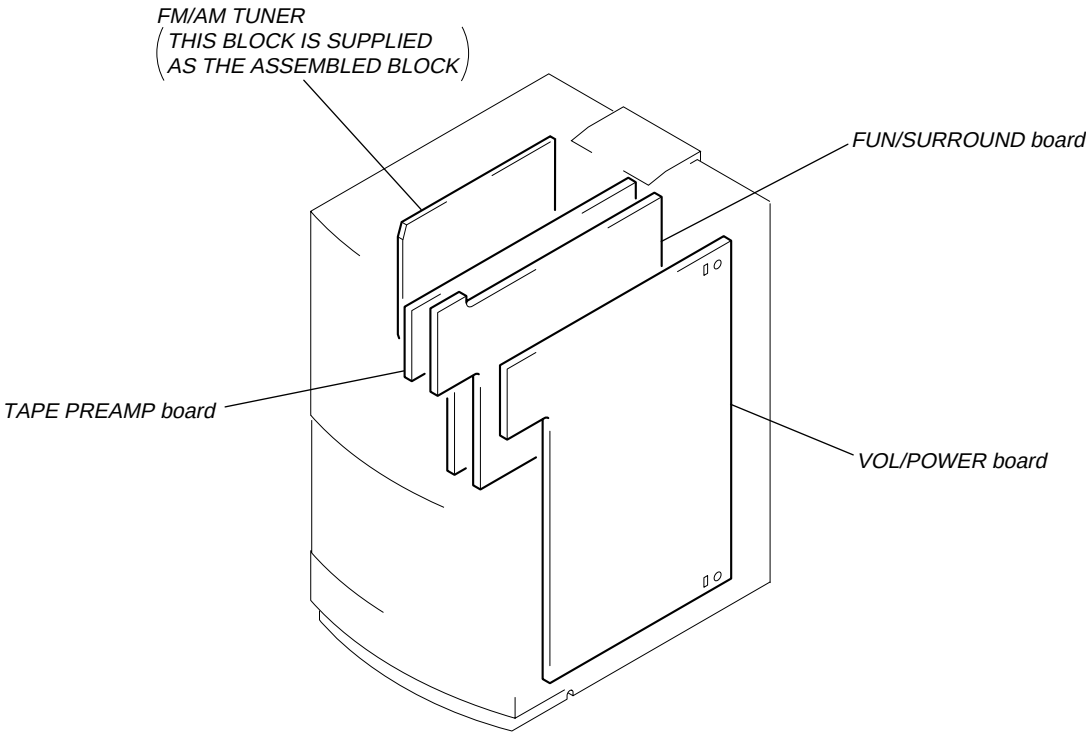
Adjustment Location:

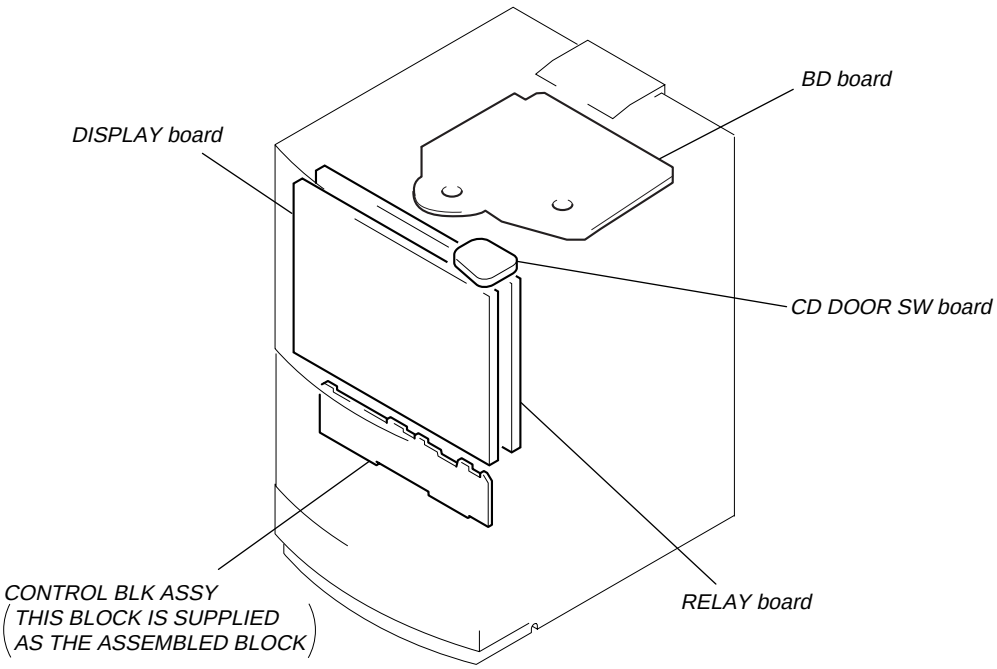
[BD BOARD] — Component Side —



SECTION 5
DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION





5-2. IC PIN FUNCTION

- **IC201 MASTER CONTROL (TC9613)**

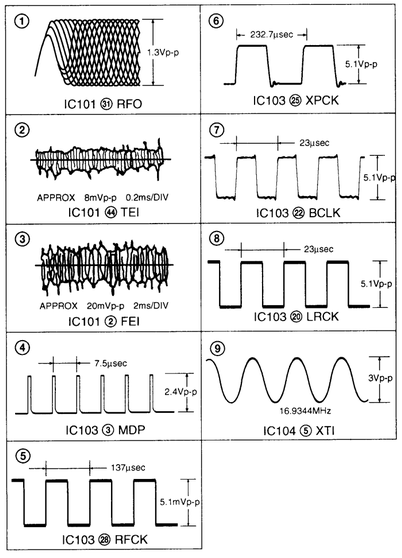
Pin No.	Pin Name	I/O	Function
1	GND	—	Ground
2	XOUT	O	8 MHz Oscillator output
3	XIN	I	8 MHz Oscillator input
4	RESET	I	CPU reset input
5	TUNED	I	Station detector input
6	STEREO	I	Stereo signal input
7	TEST	I	Test pin (Connected to ground)
8	POWDEC	I	Power down detect input
9	REMOTE	I	Remote signal input
10	PLL CE	O	Chip enable output
11	PLL CLK	O	Clock output
12	PLL DATAI	I	Data input
13	PLL DATAO	O	Data output
14	SERVO CK	O	Servo clock output
15	SUB Q	I	Servo subq data & status input
16	DATA	O	Servo command data output
17	MUTE D	O	Digital mute control output
18	CDPOWER	O	CD power supply output
19	CLOSESW	I	Top loading close switch input
20	FSW	O	Servo focus down output
21	SENSE	I	Servo status SENSE input
22	MLAT	O	D/A MLAT output
23	XLAT	O	Servo command latch output
24	XRST	O	Servo chip reset output
25	SCOR	I	Servo SUBQ sync input
26	PLAYSW	I	Tape play switch input
27	MTRSNS	I	Tape motor reel sense input
28	TAPEIN	I	Tape in switch input
29	MOTOR	O	Tape control output
30	SOL	O	Tape control output
31	AMS	I	Tape music search input
32	PLYMUTE	O	Tape play back mute signal output
33	$\overline{\text{REC}}$/PB	O	Tape control output
34	DOLBYNR	O	Tape control output
35	RECMUTE	O	Tape recording mute signal output
36	BIAS	O	Tape control output
37	REC LED	O	Record LED output
38	CD SYNC	O	CD SYNC LED output
39	WIDE	O	Wide LED output
40	KEYIO 1	I	AD key input (16 keys)
41	KEYIO 2	I	AD key input (16 keys)
42	BANDAREA	—	Band area option (Not used)
43	N.C	—	Not used
44	LOUDSEL	I	Loudness initial select input
45	N.C	—	Not used
46	FRECSW	I	Tape forward record switch input
47	RRECSW	I	Tape reverse record switch input
48	AREF	I	A/D convert refrence input (+5V)
49	AGND	I	A/D convert Input ground input
50	GND	—	Ground

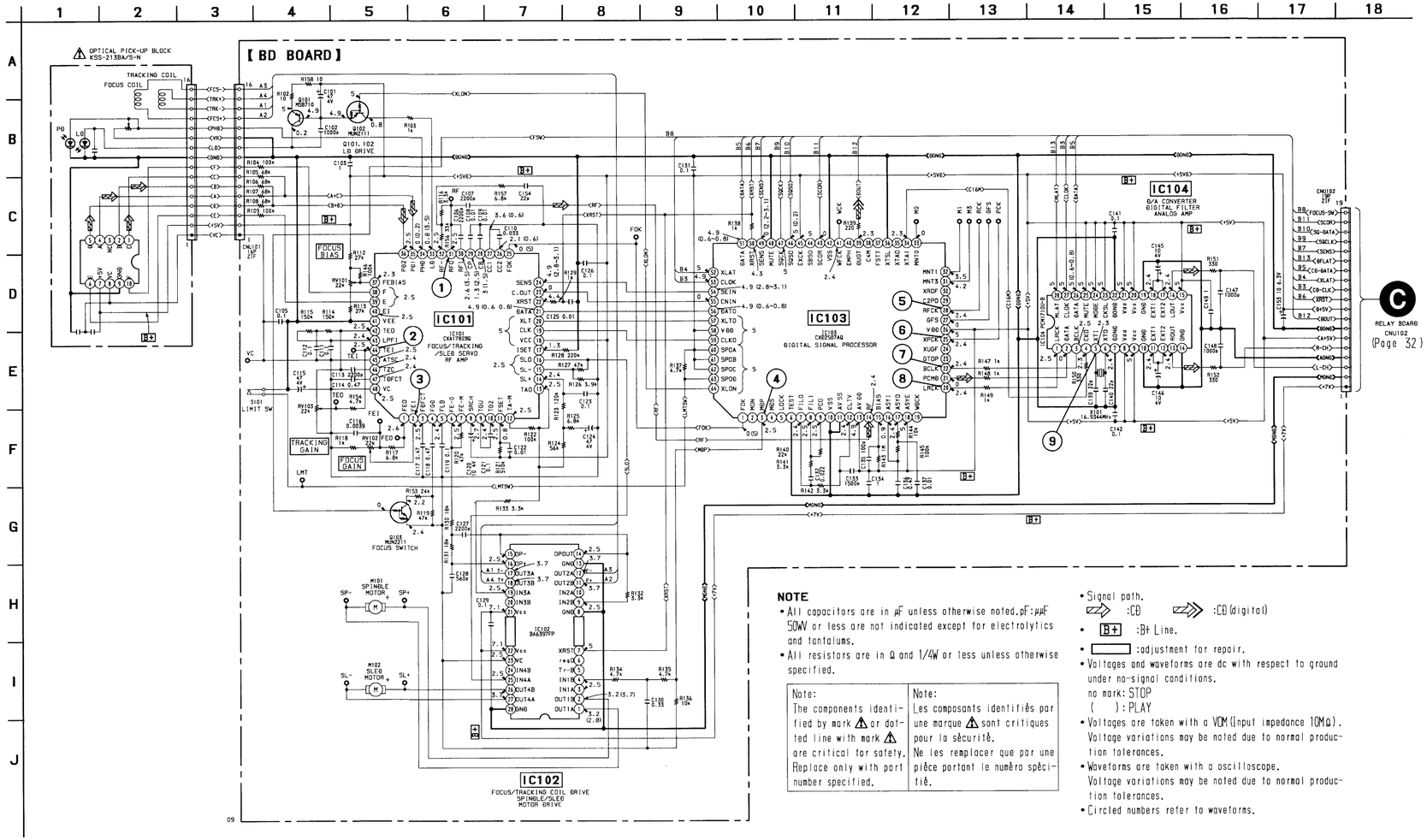
Pin No.	Pin Name	I/O	Function
51	VDD	—	+5V power supply
52	NARROW	O	Narrow LED output
53	NORMAL	O	Normal LED output
54	LOUD	O	Loudness on/off control output
55	DBFB	—	Not used (Connected to ground)
56	VOL CLK	O	Volume control clock output
57	VOL DATA	O	Volume control data output
58	VOL STB	O	Volume control strobe output
59	FUNC A	O	TAPE/TUNER control signal output (00: TAPE/01: TUNER)
60	FUNC B	O	CD/MD control signal output (10: CD/11: MD)
61	MDMUTE	O	MD/REC ON mute output
62	POWER	O	System power output
63	MUTE A	O	Audio mute control output
64-91	SEG27-SEG0	O	LCD segment output
92	COM3	O	LCD common 3 output
93	COM2	O	LCD common 2 output
94	COM1	O	LCD common 1 output
95	COM0	O	LCD common 0 output
96	VLC	O	LCD drive power supply output
97	N.C	—	Not used (Connected to ground)
98	N.C	—	Not used (Connected to ground)
99	N.C	—	Not used (Connected to ground)
100	VDD	—	+5V power supply

5-3. SCHEMATIC DIAGRAM — CD SECTION —

• See page 41–43 for IC Block Diagrams.

• Waveforms





NOTE

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Note: Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Signal path. ⇒ :CD ⇛ :CD (digital)
- B+ :B+ Line.
- ▭ :adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions. no mark: STOP ( ): PLAY
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

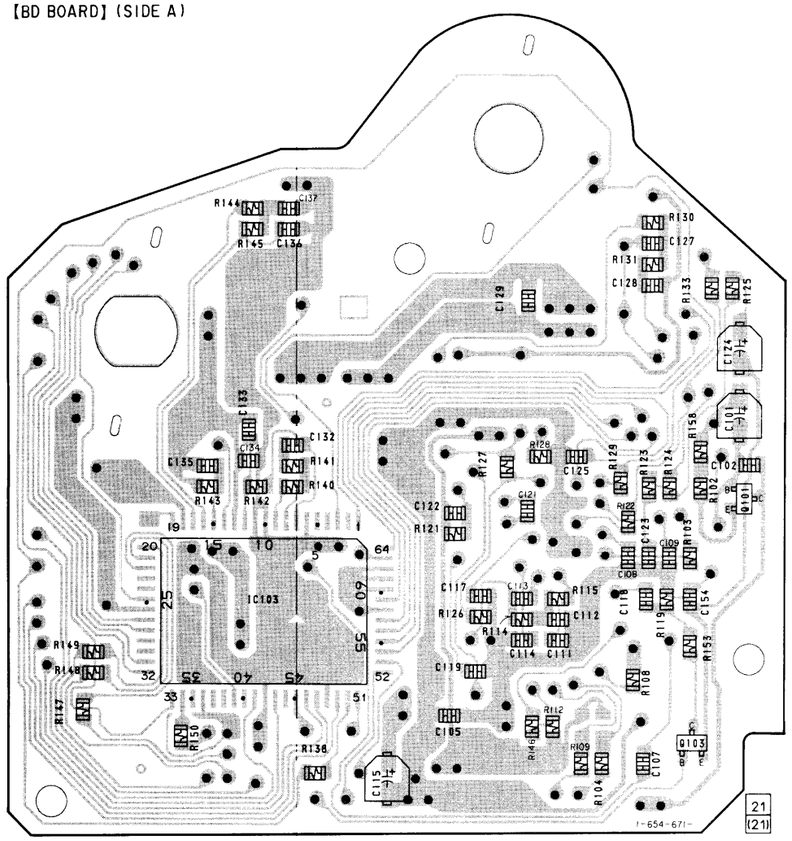
5-4. PRINTED WIRING BOARD — CD SECTION —

• See page 13 for Circuit Boards Location.

• **Semiconductor Location**

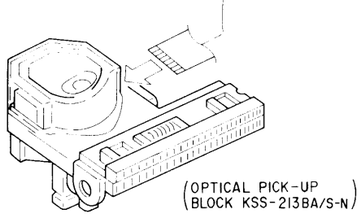
Ref. No.	Location
IC101	E-9
IC102	C-9
IC103	E-3
IC104	F-11
Q101	D-7
Q102	D-8
Q103	F-6

【BD BOARD】(SIDE A)



【BD BOARD】(SIDE B)

C
RELAY BOARD
CNU102
(Page 35)



(OPTICAL PICK-UP
BLOCK KSS-213BA/S-N)

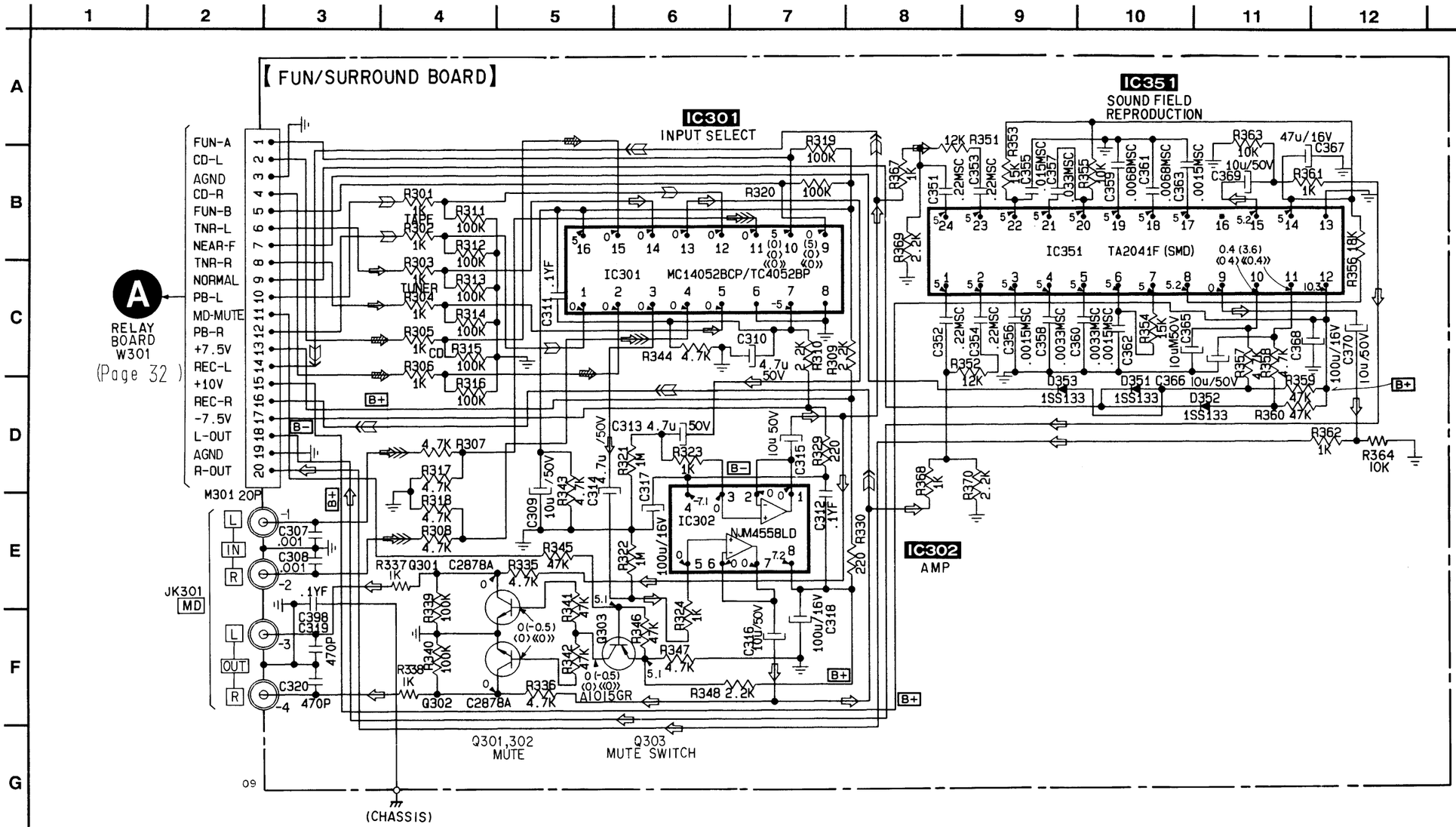
MC-Service

Note:

- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▒▒ : Pattern from the side which enable seeing. (The other layer's patterns are not indicated.)

5-5. SCHEMATIC DIAGRAM — INPUT/OUTPUT SECTION —

• See page 43, 44 for IC Block Diagrams.



Note:

- All capacitors are in µF unless otherwise noted. pF:µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- .XX, .XYF and .XXXMSC mean 0.XXXµF in the constant display of capacitors.
- The name if transistor type is simplified as below:
  2SA1015GR → A1015GR
  2SC2878A → C2878A
- B+ : B+ Line
- B– : B– Line
- Voltage and waveforms are dc with respect to ground under no-signal (deturned) conditions.
  no mark : FM
  ( ) : CD PLAY
  < > : PB
  << >> : REC
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Ground (GND) mark
  ⏚ : Analog GND
- Signal path.
  ⇨ : FM
  ⇛ : MD
  ⇨ : PB
  ⇨ : REC
  ⇨ : CD

MC-Service

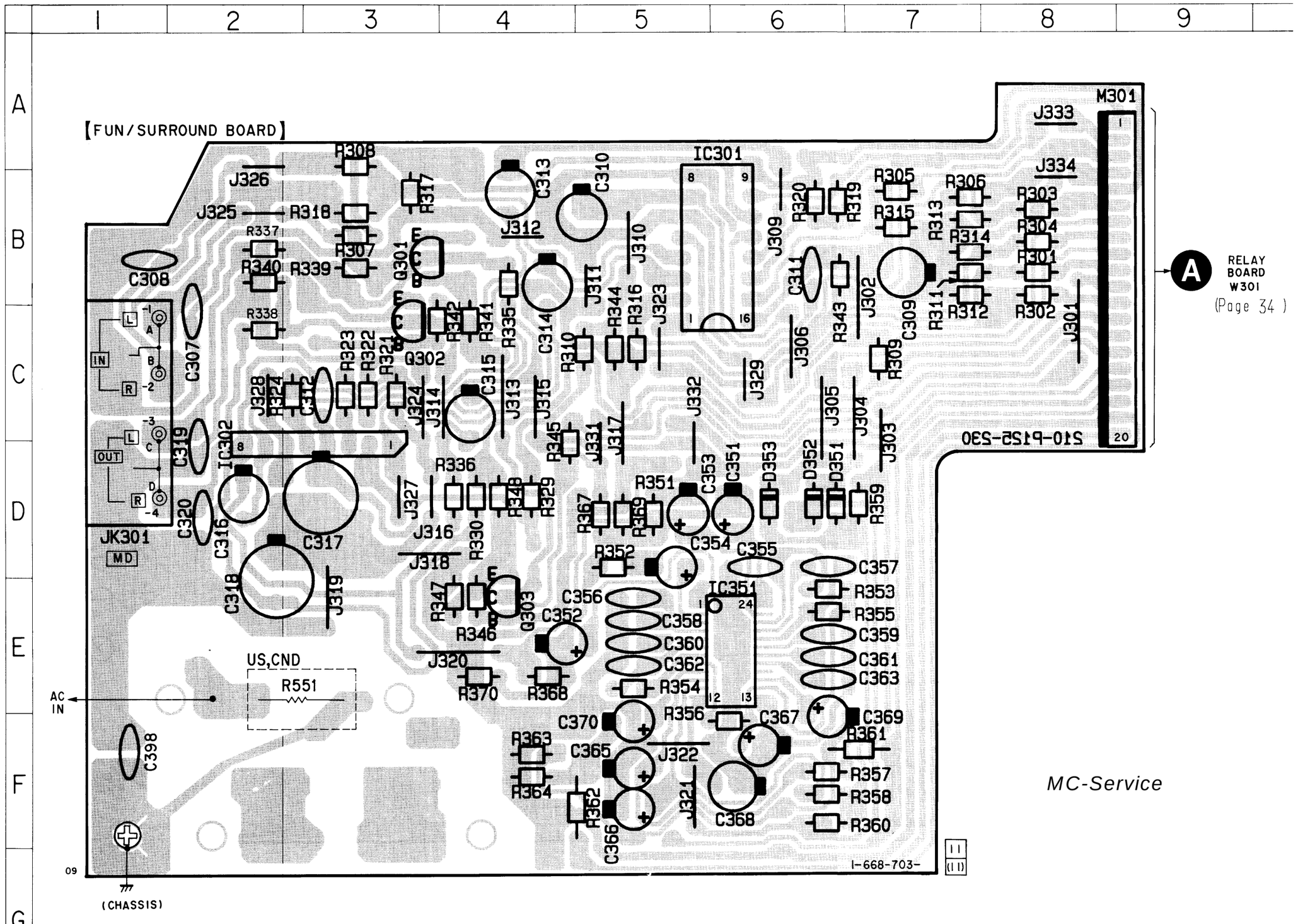
5-6. PRINTED WIRING BOARD — INPUT/OUTPUT SECTION —

• See page 13 for Circuit Boards Location.

Note:
- ——— : parts extracted from the component side.
- ▒▒▒ : Pattern from the side which enable seeing
- Abbreviation
  CND : Canadian model.

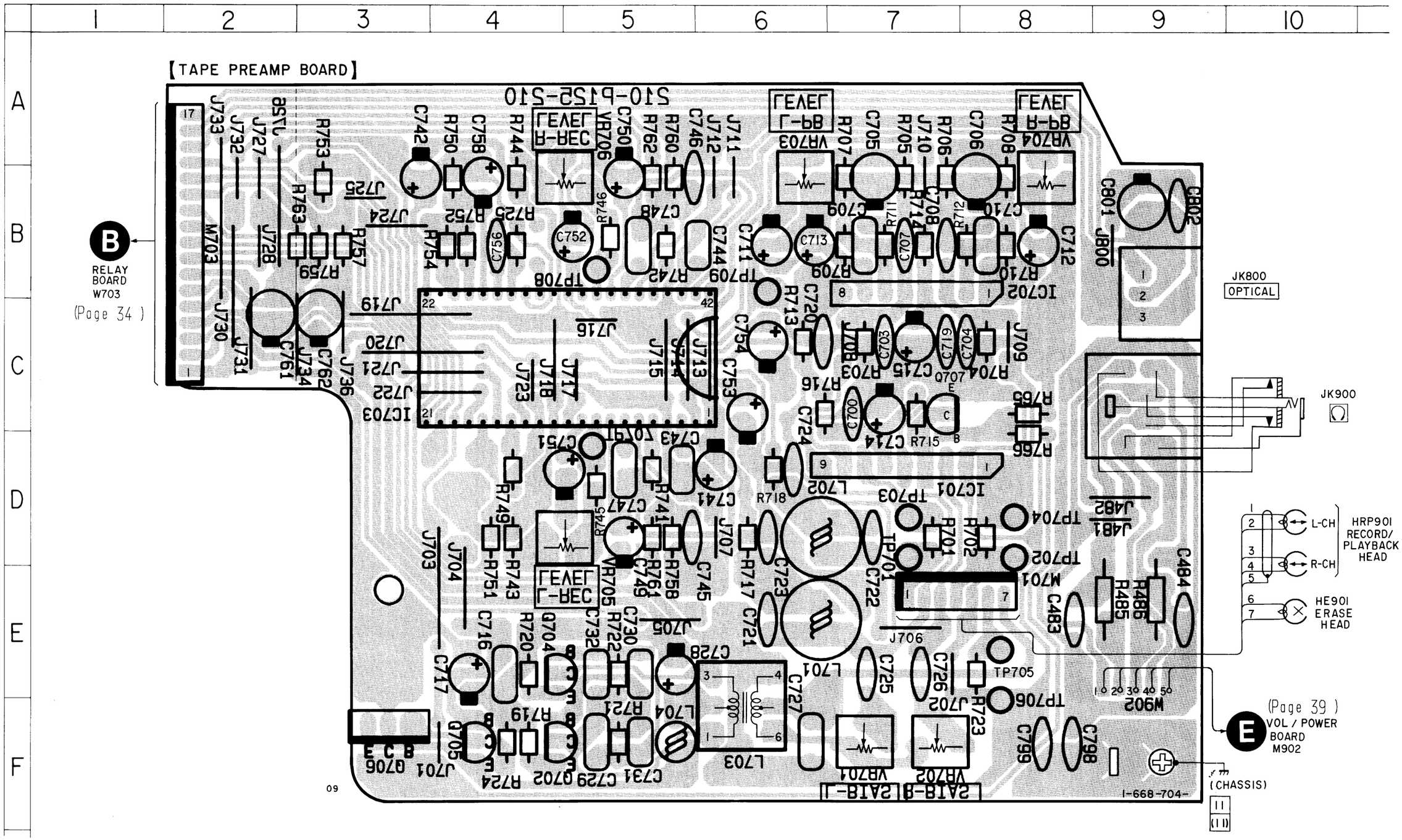
- **Semiconductor Location**

Ref. No.	Location
D351	D-6
D352	D-6
D353	D-6
IC301	B-5
IC302	C-2
IC351	E-6
Q301	B-3
Q302	C-3
Q303	E-4



5-7. PRINTED WIRING BOARD —DECK SECTION —

• See page 13 for Circuit Boards Location.



Note:

- ——— : parts extracted from the component side.
- ▒▒▒ : Pattern from the side which enable seeing.

5-8. SCHEMATIC DIAGRAM — DECK SECTION —

• See page 43 for IC Block Diagrams.

• **Semiconductor Location**

Ref. No.	Location
IC701	D-8
IC702	B-8
IC703	C-4
Q702	F-4
Q704	E-4
Q705	F-4
Q706	F-3
Q707	C-7

Note:

- All capacitors are in µF unless otherwise noted. pF:µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- .XX, .XYF and .XXXMSC mean 0.XXXµF in the constant display of capacitors.
- The name if transistor type is simplified as below:
  2SB1375 → B1375
  2SC945P → C945P
- B+ : B+ Line
- B– : B– Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (deturned) conditions.
  no mark : PB
  ( ) : REC
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Ground (GND) mark
- Signal path.
  ▷ : PB
  ▷ : REC
  ▨ : CD (digital)

CONTROL PIN ACTIVE LIST (HA12203)

PIN \ KEY	STOP>	3S'MODE WAITTING REC. PAUSE	DIR. SELECT F-PLAY R-PLAY	REC ON LED ON REC. PAUSE	STOP	DIRECT KEY F-PLAY R-PLAY	DIRECT KEY F.F. F.R.
REC./PB/PASS	Mid	Mid	Mid	Lo	Mid	Mid	Mid
LINE MUTE ON/OFF	Hi	Hi	Hi	Hi	Hi	Lo	Hi
REC.MUTE ON/OFF	Lo	Lo	Lo	Hi	Lo	Lo	Lo
BIAS ON/OFF	Lo	Lo	Lo	Hi	Lo	Lo	Lo
PB A / B	FIX TO Ain; CONNECT TO Lo.						
A 120 / 70	Lo=120uS (NORNAL), Hi=70uS (CRO2)						
NORMAL / HIGH	FIX TO NORMAL SPEED; CONNECT TO Lo.						
BNORM/CROM/METAL	WHEN PACK TAPE NORMAL = Lo; CRO2 = Mid.						
NR ON/OFF	NR ON = Hi; OFF = Lo.						
MUSIC SEARCH O/P	BLANK = Hi; MUSIC = Lo.						

5-9. SCHEMATIC DIAGRAM — DISPLAY SECTION —

• See page 14, 15 for IC Pin Functions.

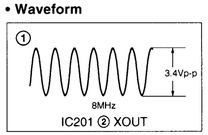
Note:

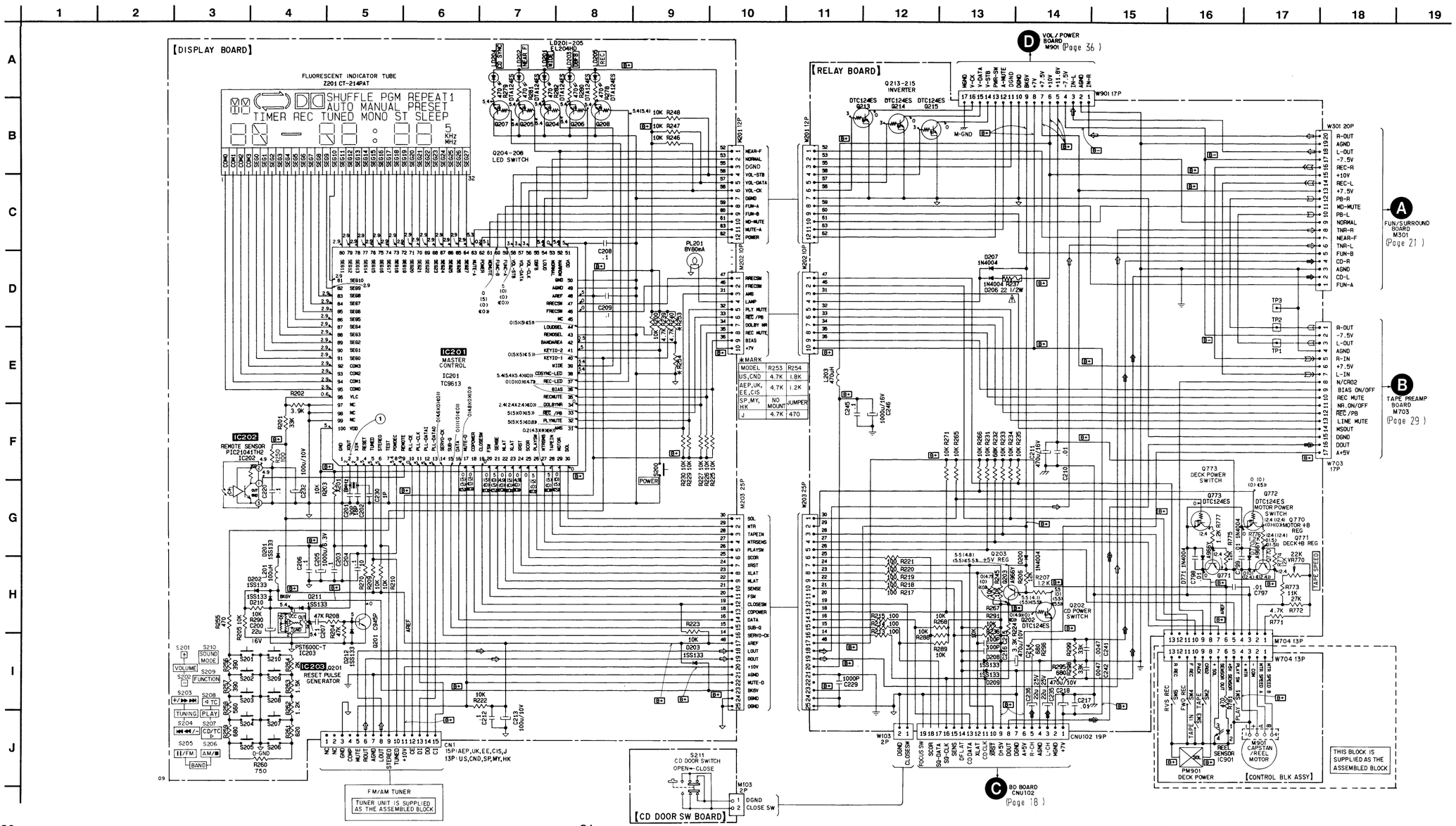
- All capacitors are in µF unless otherwise noted. pF:µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- .XX, .XYF and .XXXMSC mean 0.XXXµF in the constant display of capacitors.
- : fusible resistor.
- The name if transistor type is simplified as below:
  2SA966Y → A966Y
  2SC945P → C945P
- B+: B+ Line
- B−: B− Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (deturned) conditions.
  no mark : FM
  ( ) : CD PLAY
  < > : PB
  << >> : REC
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Ground (GND) mark
  : Digital GND
  : Analog GND
  : Motor GND

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Signal path.
  : FM
  : PB
  : REC
  : CD
  : CD (digital)
- Abbreviation
  CND : Canadian model.
  EE : East European model.
  SP : Singapore model.
  MY : Malaysia model.
  HK : Hong Kong model.

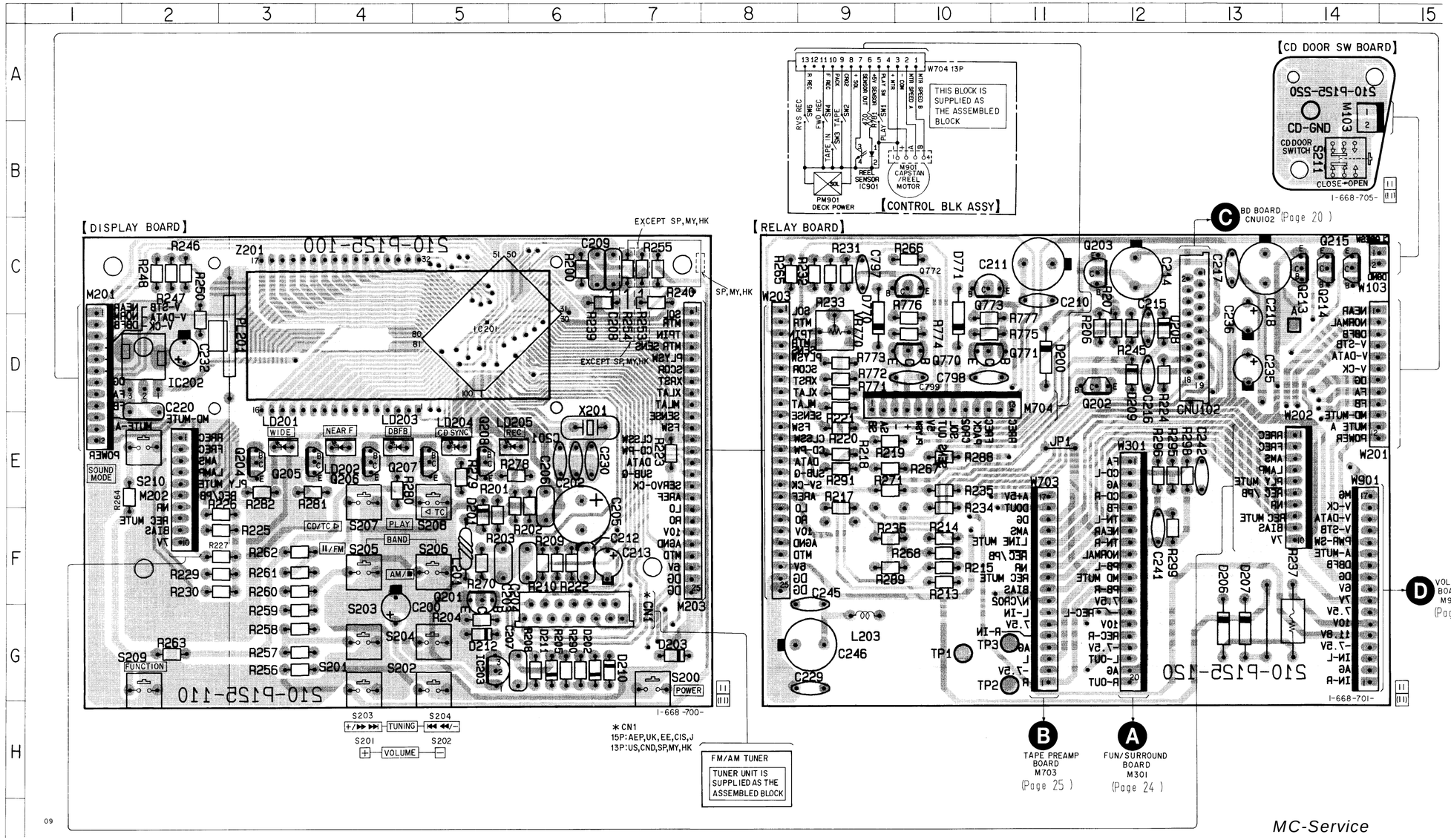
• Waveform





5-10. PRINTED WIRING BOARD — DISPLAY SECTION —

• See page 13 for Circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D200	D-11
D201	F-5
D202	G-6
D203	G-7
D206	G-13
D207	G-13
D208	D-12
D209	D-12
D210	G-7
D211	G-6
D212	G-5
D770	D-9
D771	C-10
IC201	D-5
IC202	D-2
IC203	G-5
LD201	E-3
LD202	E-4
LD203	E-4
LD204	E-5
LD205	E-6
Q201	F-5
Q202	D-12
Q203	C-12
Q204	E-4
Q205	E-4
Q206	E-4
Q207	E-5
Q208	E-5
Q213	C-14
Q214	C-14
Q215	C-14
Q770	D-10
Q771	D-11
Q772	C-10
Q773	C-10

Note:
- •—— : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- : Pattern from the side which enable seeing.
- : Pattern of the rear side.
- Abbreviation
  - CND : Canadian model.
  - EE : East European model.
  - SP : Singapore model.
  - MY : Malaysia model.
  - HK : Hong Kong model.

5-11. CHEMATIC DIAGRAM — POWER SECTION —

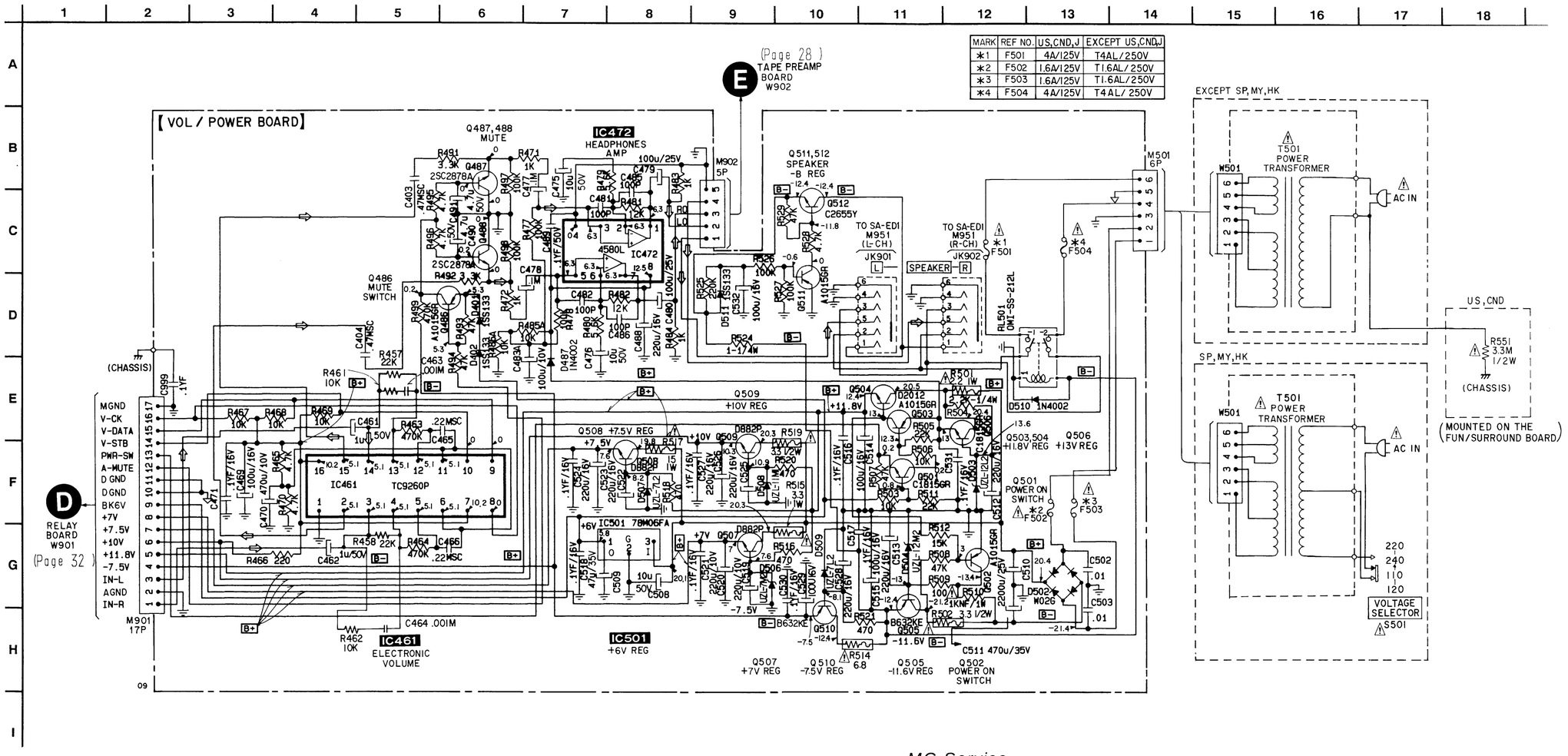
• See page 43 for IC Block Diagrams.

Note:

- All capacitors are in µF unless otherwise noted. pF:µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- .XX, .XYF and .XXXMSC mean 0.XXXµF in the constant display of capacitors.
- ⏦ : fusible resistor.
- The name if transistor type is simplified as below:
  2SA1015GR → A1015GR
  2SB632KE → B632KE
  2SC1815GR → C1815GR
  2SC2655Y → C2655Y
  2SD2012 → D2012
  2SD882P → D882P
- B+ : B+ Line
- B− : B− Line
- Voltage and waveforms are dc with respect to ground under no-signal (deturned) conditions.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Signal path.
  ⇨ : FM
- Abbreviation
  CND : Canadian model.
  SP : Singapore model.
  MY : Malaysia model.
  HK : Hong kong model.

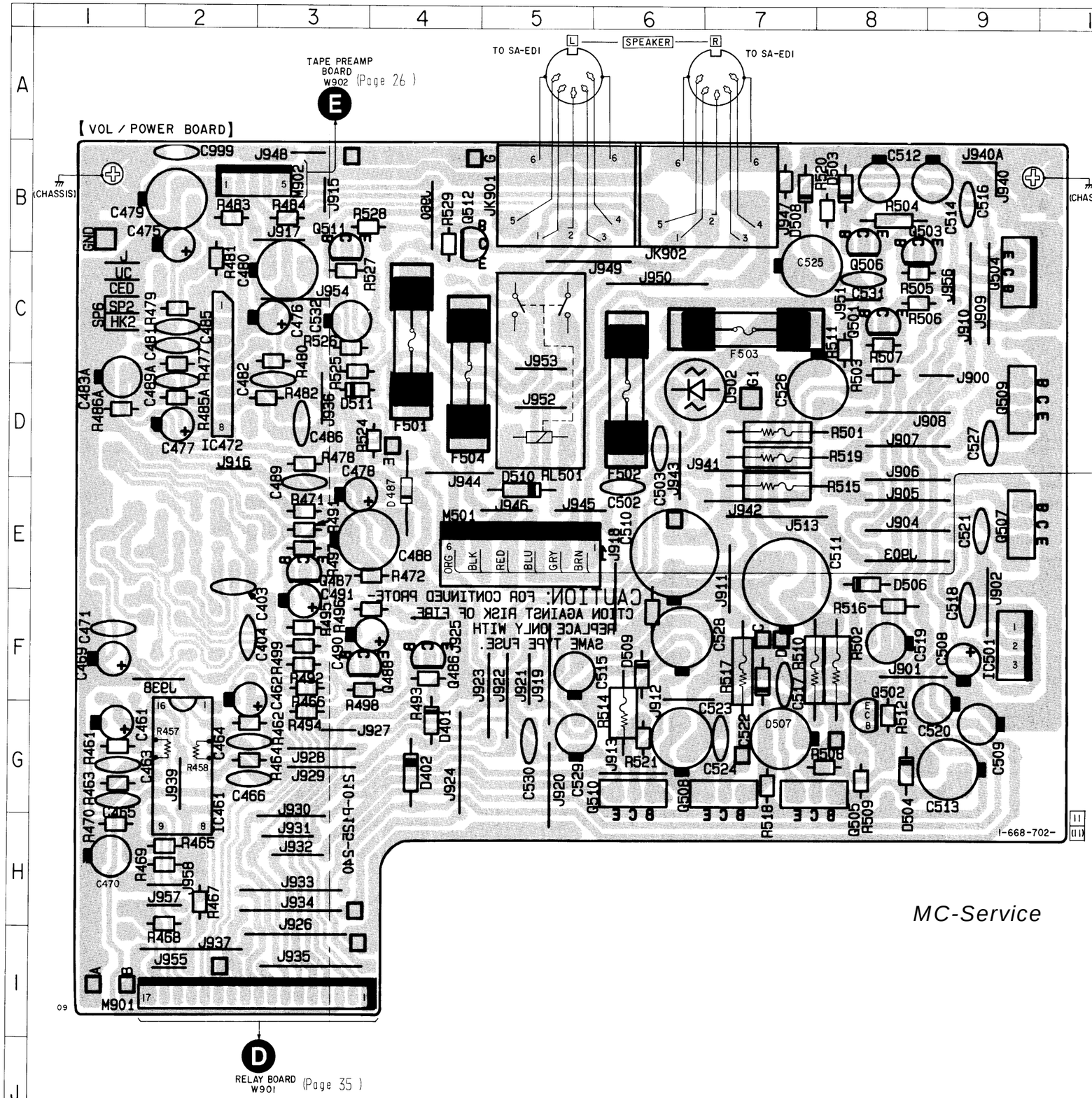


MARK	REF NO.	US,CND,J	EXCEPT US,CND,J
*1	F501	4A/125V	T4AL/250V
*2	F502	1.6A/125V	T1.6AL/250V
*3	F503	1.6A/125V	T1.6AL/250V
*4	F504	4A/125V	T4AL/250V

MC-Service

5-12. PRINTED WIRING BOARD — POWER SECTION —

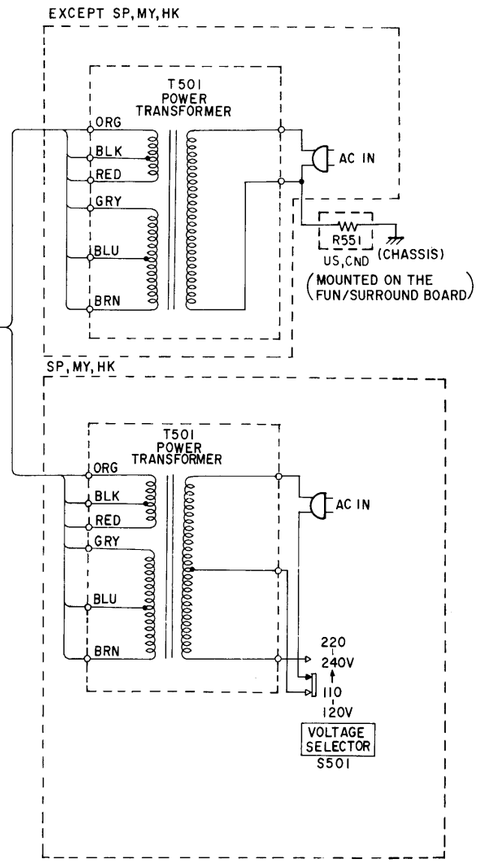
• See page 13 for Circuit Boards Location.



MC-Service

• **Semiconductor Location**

Ref. No.	Location
D401	G-4
D402	G-4
D487	E-4
D502	D-6
D503	B-8
D504	G-8
D506	E-8
D507	G-7
D508	B-7
D509	F-6
D510	E-5
D511	D-3
IC461	G-2
IC472	D-2
IC501	F-9
Q486	F-4
Q487	E-3
Q488	F-4
Q501	C-8
Q502	F-8
Q503	B-8
Q504	C-9
Q505	H-8
Q506	C-8
Q507	E-9
Q508	G-6
Q509	D-9
Q510	G-6
Q511	B-3
Q512	B-4

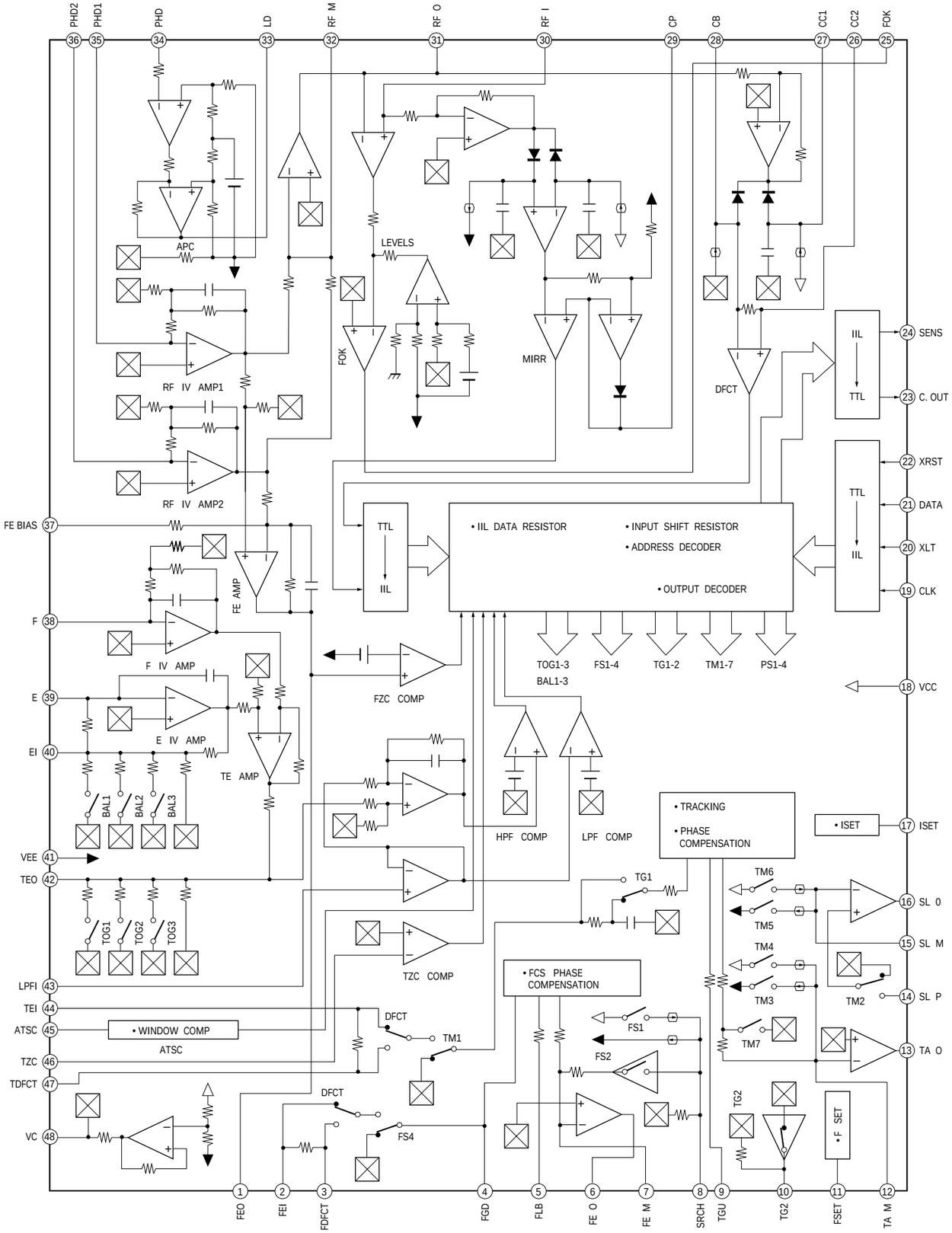


Note:

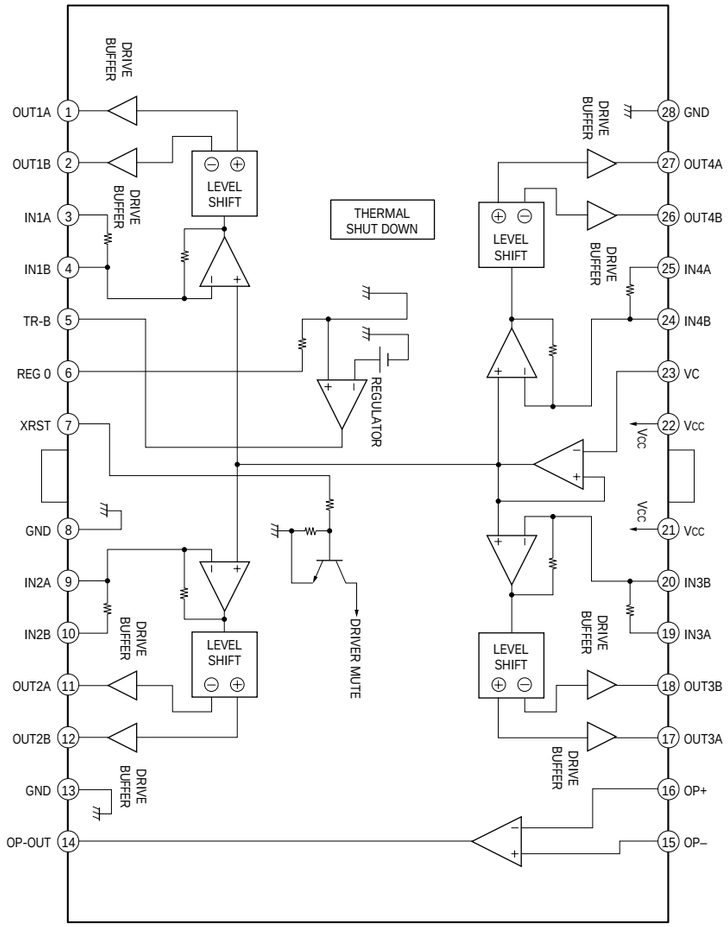
- ____ : parts extracted from the component side.
- : Pattern from the side which enable seeing.
- Abbreviation
  CND : Canadian model.
  SP : Singapore model.
  MY : Malaysia model.
  HK : Hong kong model.

5-13. IC BLOCK DIAGRAMS

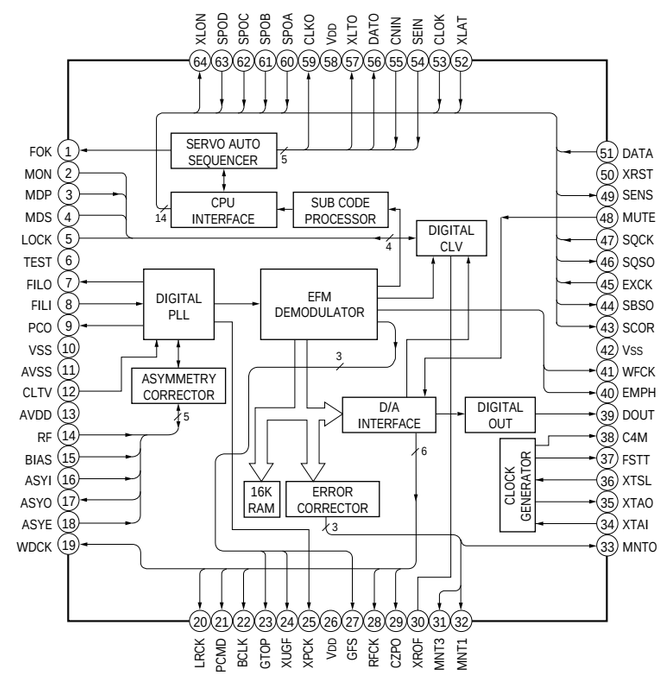
CD SECTION
IC101 CXA1782BQ



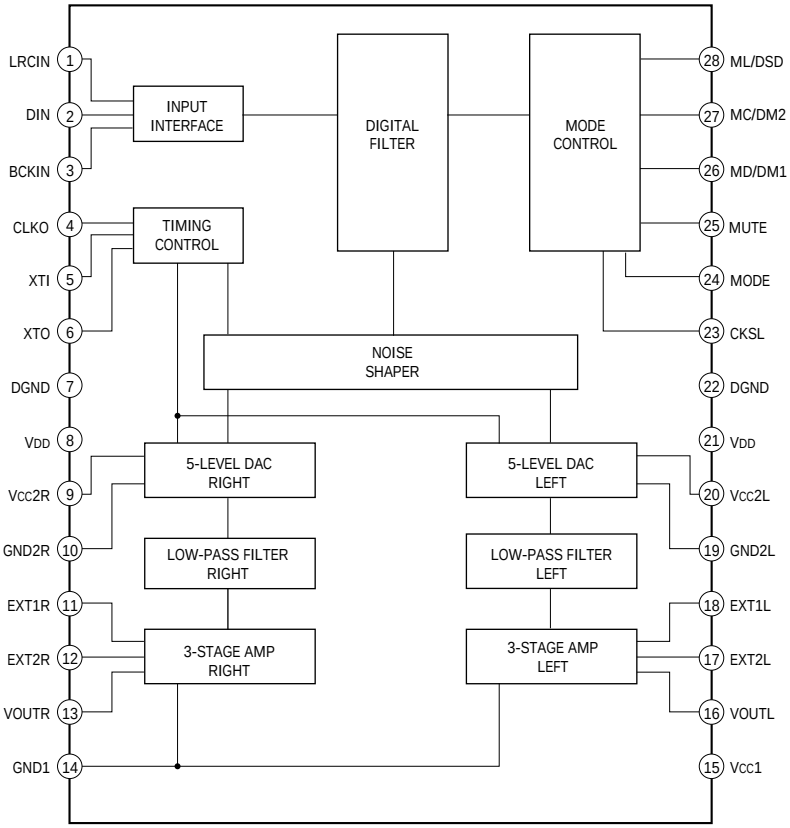
IC102 BA6397FP



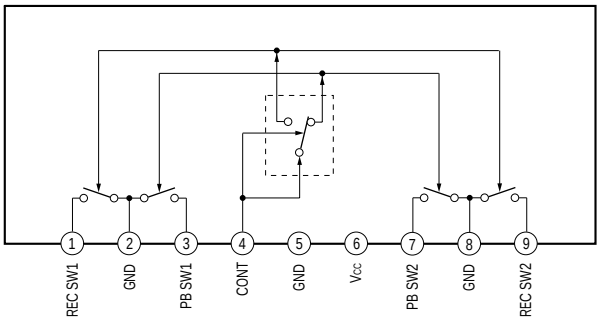
IC103 CXD2507AQ



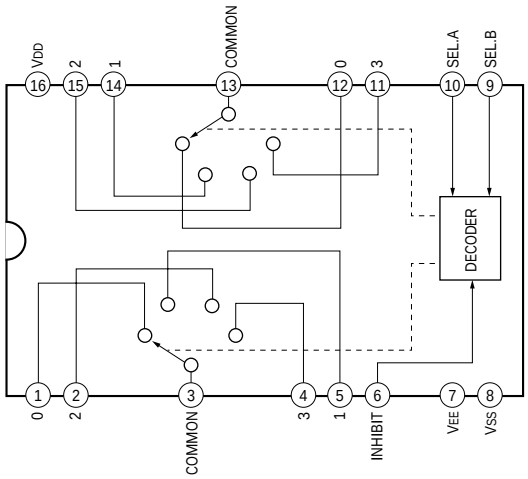
IC104 PCM1710U-B



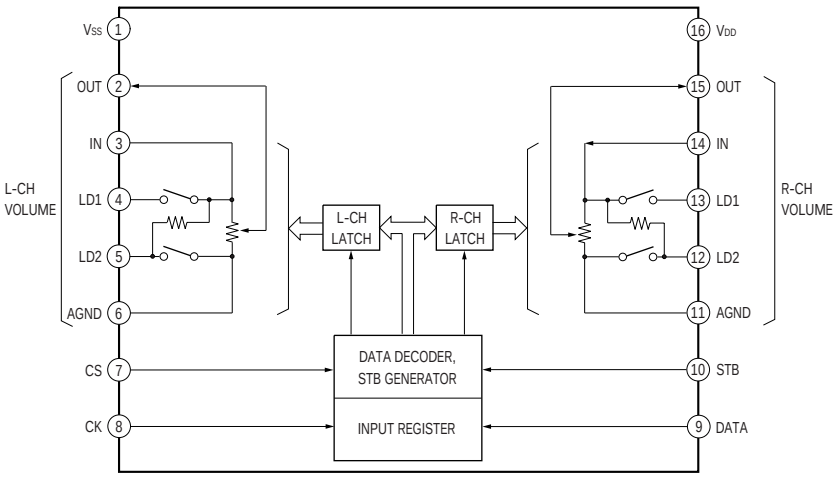
DECK SECTION
IC701 BA3126N



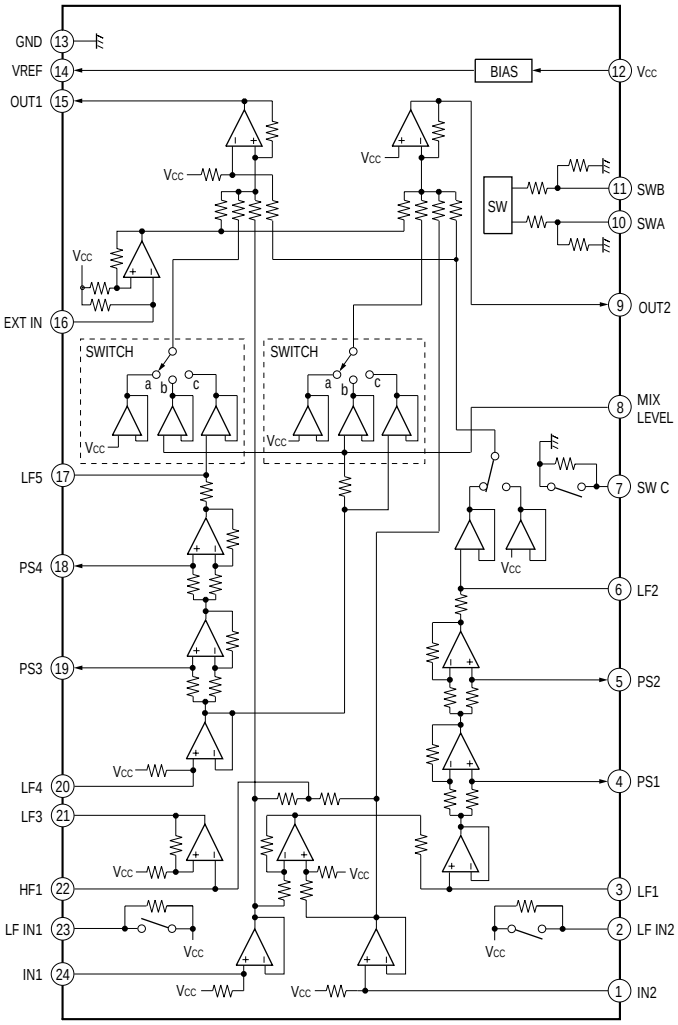
INPUT/OUTPUT SECTION
IC301 MC14052BCP



POWER SECTION
IC461 TC9260P



IC351 TA2041F



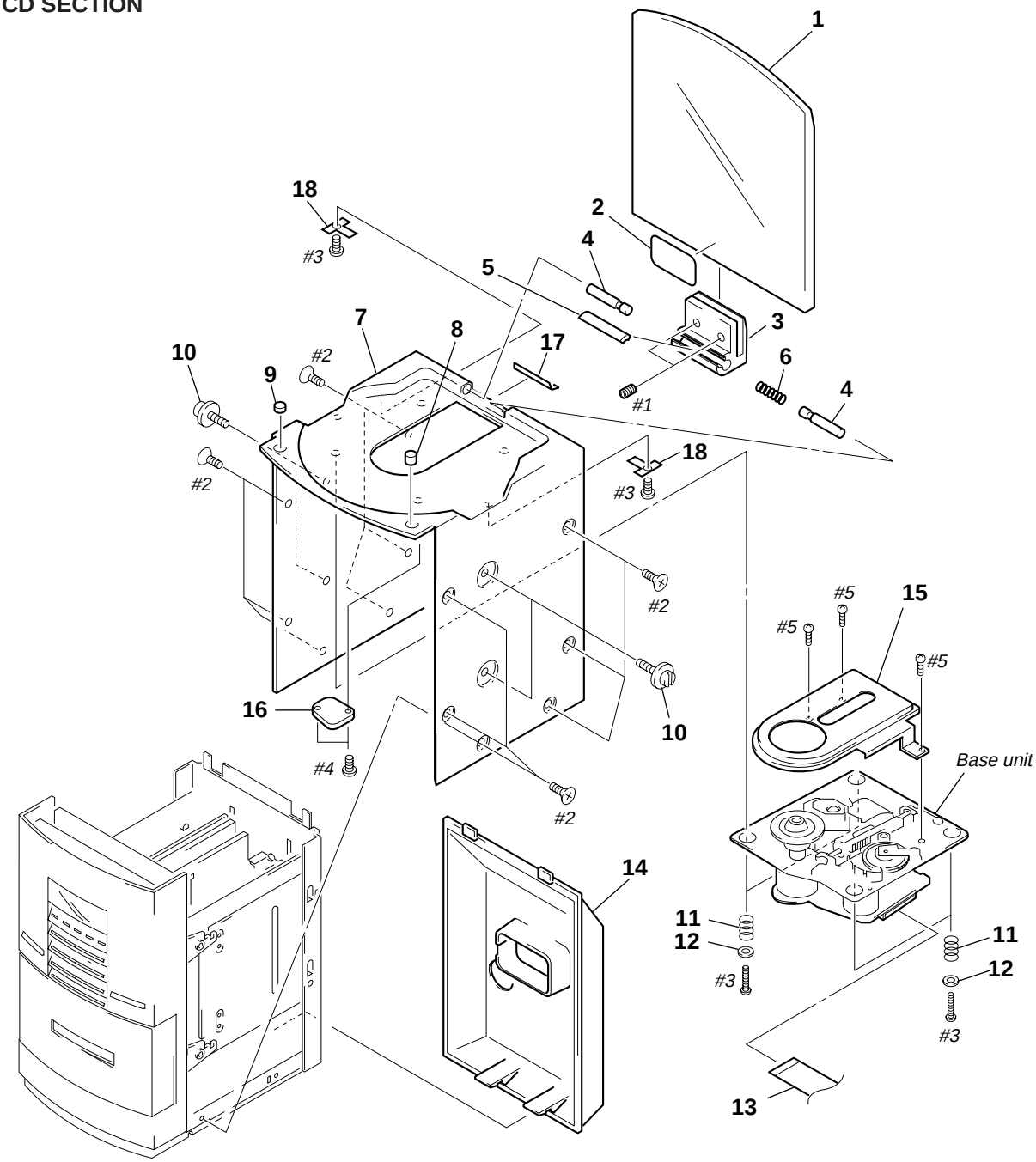
SECTION 6
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  CND : Canadian model
  EE : East European model
  HK : Hong Kong model
  SP : Singapore model
  MY : Malaysia model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

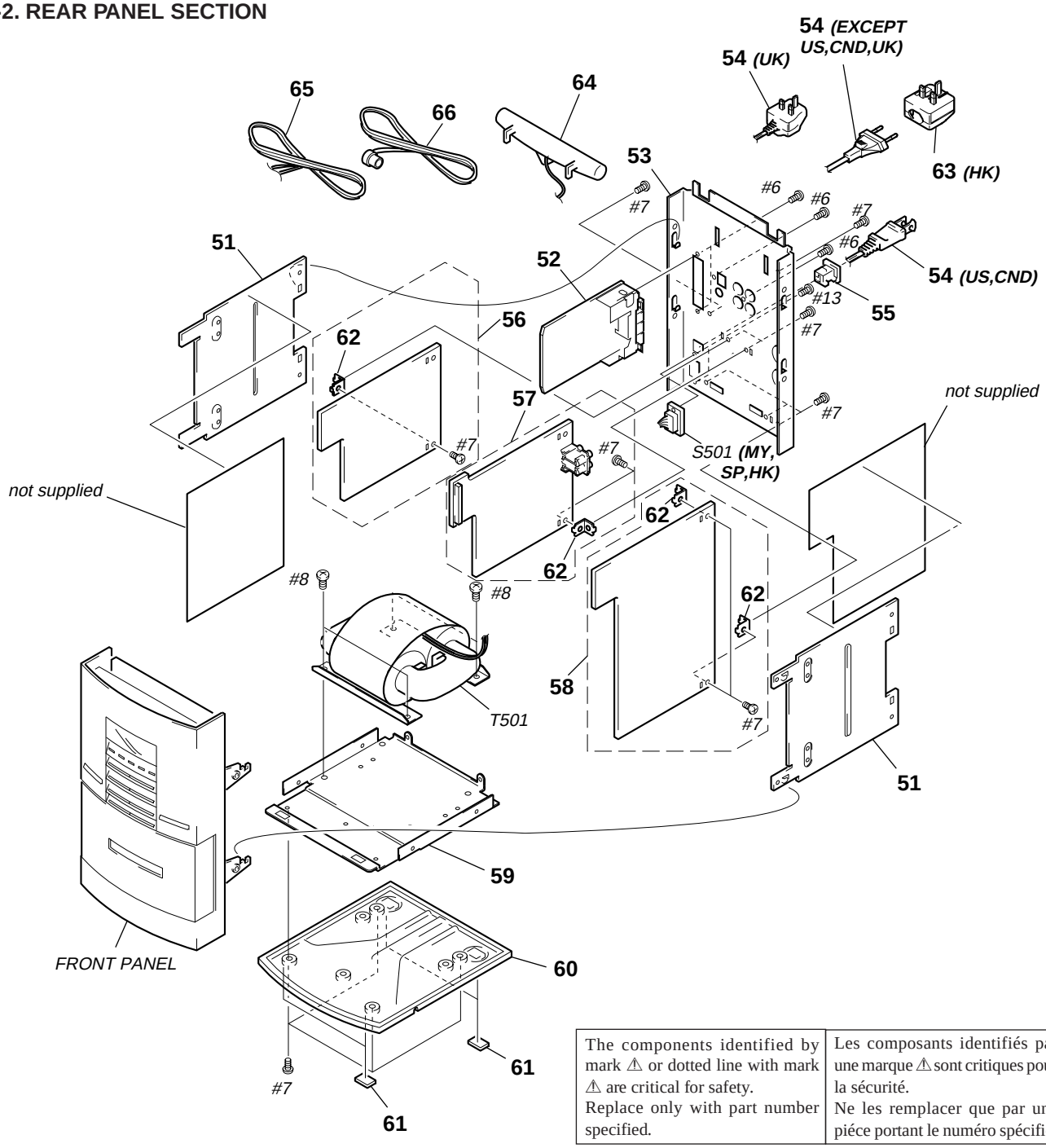
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

6-1. CD SECTION



Ref. No.	Part No.	Description	Remark
1	4-997-375-01	GLASS DOOR W/PRINGING	
2	4-997-373-01	HINGE PLATE	
3	4-997-355-01	DOOR HINGE	
4	4-997-365-01	HINGE PIN	
5	4-997-370-01	BAR RUBBER	
6	4-997-356-01	HINGE SPRING	
7	4-997-349-01	CD BASE	
8	4-997-367-01	PUSH BUTTON	
9	4-997-369-01	CUSHION	
10	4-997-345-01	HOOK SCREW	
11	4-948-503-01	SPRING (BU), COMPRESSION	
12	4-997-372-01	WASHER	
13	1-783-091-11	WIRE (FLAT TYPE)	
* 14	4-997-350-01	BACK COVER (US,CND,MY,SP,HK)	
* 14	4-997-350-11	BACK COVER (AEP,UK,EE,CIS)	
15	4-997-353-01	PICK UP COVER	
* 16	A-4407-244-A	CD DOOR SW BOARD, COMPLETE	
17	4-977-376-01	STOP SPRING	
18	4-977-371-01	STOPPER	

6-2. REAR PANEL SECTION

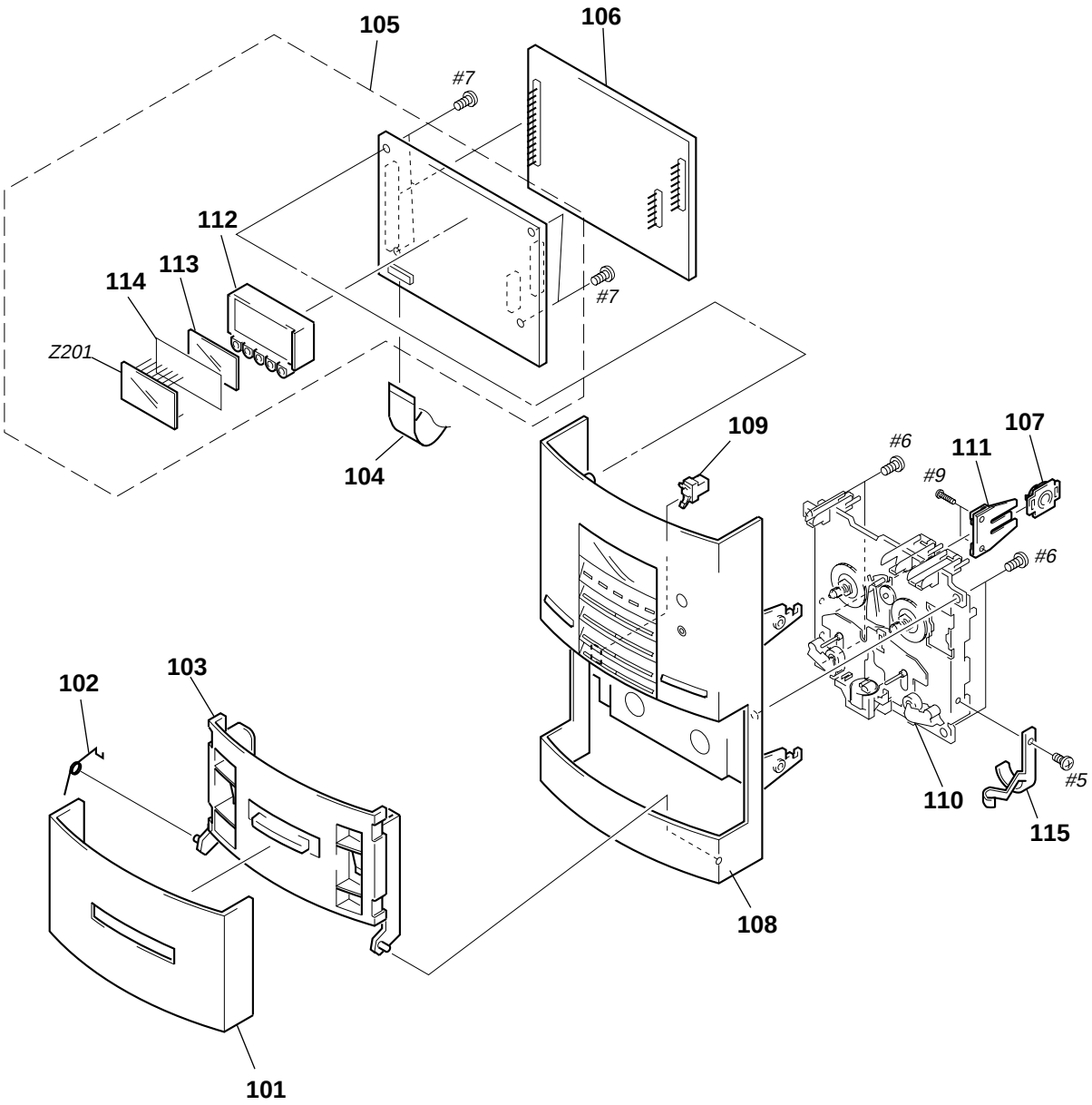


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
* 51	4-997-363-01	SIDE BRACKET	
52	1-693-400-21	FM/AM TUNER (AEP,UK,EE,CIS)	
52	1-693-400-31	FM/AM TUNER (US,CND)	
52	1-693-400-41	FM/AM TUNER (MY,SP,HK)	
* 53	4-997-368-11	REAR PANEL (AEP)	
* 53	4-997-368-21	REAR PANEL (UK)	
* 53	4-997-368-31	REAR PANEL (EE,CIS)	
* 53	4-997-368-41	REAR PANEL (US,CND)	
* 53	4-997-368-51	REAR PANEL (MY,SP)	
* 53	4-997-368-61	REAR PANEL (HK)	
⚠54	1-551-478-00	CORD, POWER (POLAR.SPT-2)(US,CND)	
⚠54	1-555-750-00	CORD, POWER (AEP,EE,CIS,MY,SP,HK)	
⚠54	1-751-535-11	CORD, POWER (UK)	
55	4-997-358-01	AC CORD BUSHING	
* 56	A-4407-243-A	TAPE PREAMP BOARD, COMPLETE	
* 57	A-4407-242-A	FUN/SURROUND BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
* 58	A-4407-239-A	VOL/POWER BOARD, COMPLETE (AEP,UK,EE,CIS)	
* 58	A-4407-240-A	VOL/POWER BOARD, COMPLETE (US,CND)	
* 58	A-4407-241-A	VOL/POWER BOARD, COMPLETE (MY,SP,HK)	
* 59	4-997-364-01	BOTTOM BOARD	
60	4-997-352-01	BOTTOM COVER	
61	4-997-366-01	RUBBER FOOT	
* 62	4-997-378-01	PC BOARD BRACKET	
⚠63	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
64	X-4949-451-1	AM ANT SUB ASSY	
65	1-501-659-11	ANTENNA (FM) (US,CND,MY,SP,HK)	
66	1-501-985-11	LEAD, ANTENNA (AEP,UK,EE,CIS)	
⚠S501	1-771-308-11	SELECTOR, POWER (MY,SP,HK)	
⚠T501	1-431-697-21	TRANSFORMER, POWER (AEP,UK,EE,CIS)	
⚠T501	1-431-697-31	TRANSFORMER, POWER (US,CND)	
⚠T501	1-431-697-41	TRANSFORMER, POWER (MY,SP,HK)	

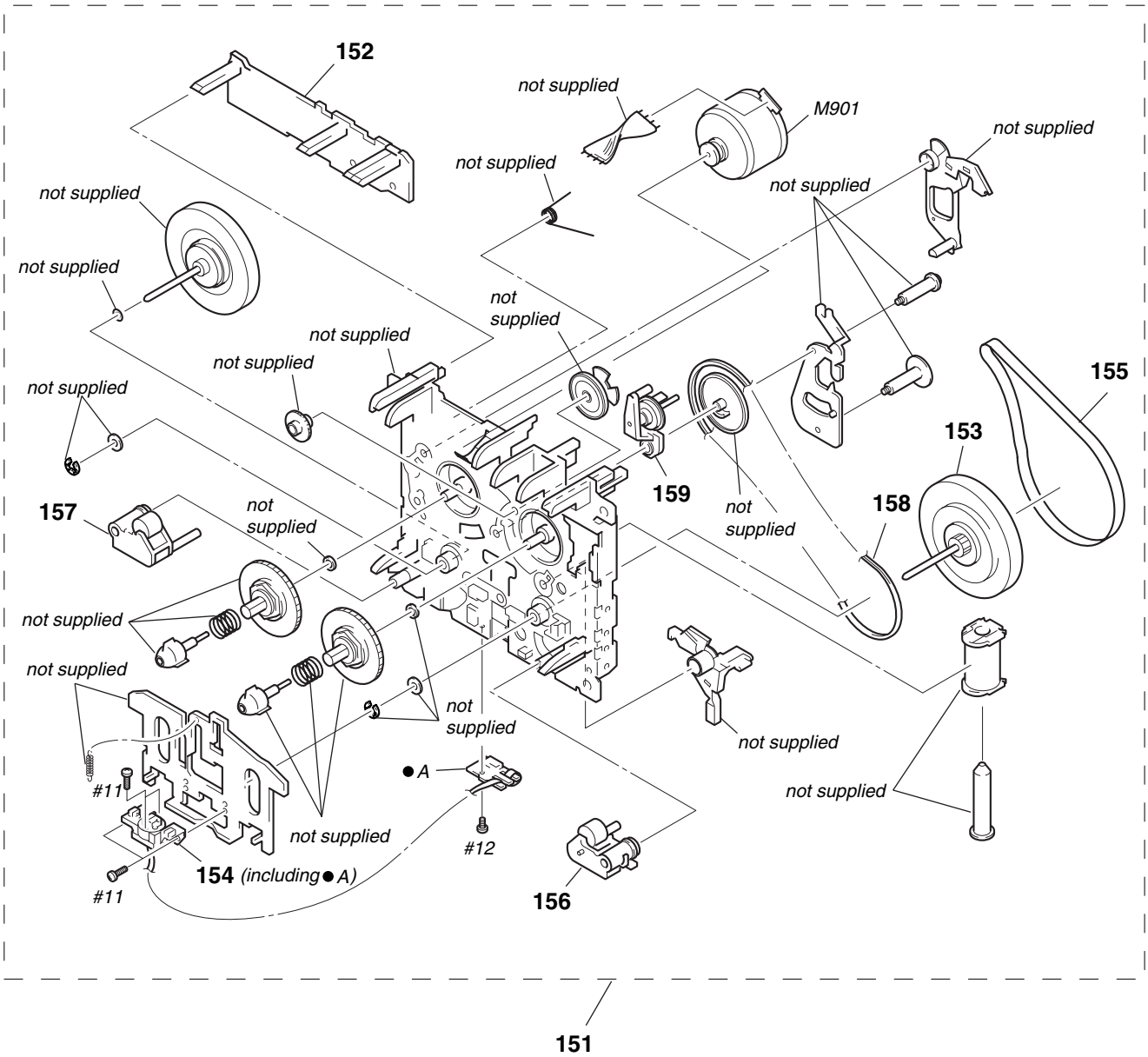
6-3. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
101	4-997-351-01	DOOR COVER	
102	4-997-354-01	DOOR SPRING	
103	X-4949-450-1	CASS DOOR SUB ASSY	
104	1-773-009-11	WIRE (FLAT TYPE) (15 CORE) (AEP,UK,EE,CIS)	
104	1-751-688-11	WIRE (FLAT TYPE) (13 CORE) (US,CND,MY,SP,HK)	
* 105	A-4407-247-A	DISPLAY BOARD, COMPLETE (AEP,UK,EE,CIS)	
* 105	A-4407-248-A	DISPLAY BOARD, COMPLETE (US,CND)	
* 105	A-4407-249-A	DISPLAY BOARD, COMPLETE (MY,SP,HK)	
* 106	A-4407-245-A	RELAY BOARD, COMPLETE	
107	4-997-361-01	GEAR DAMPER	

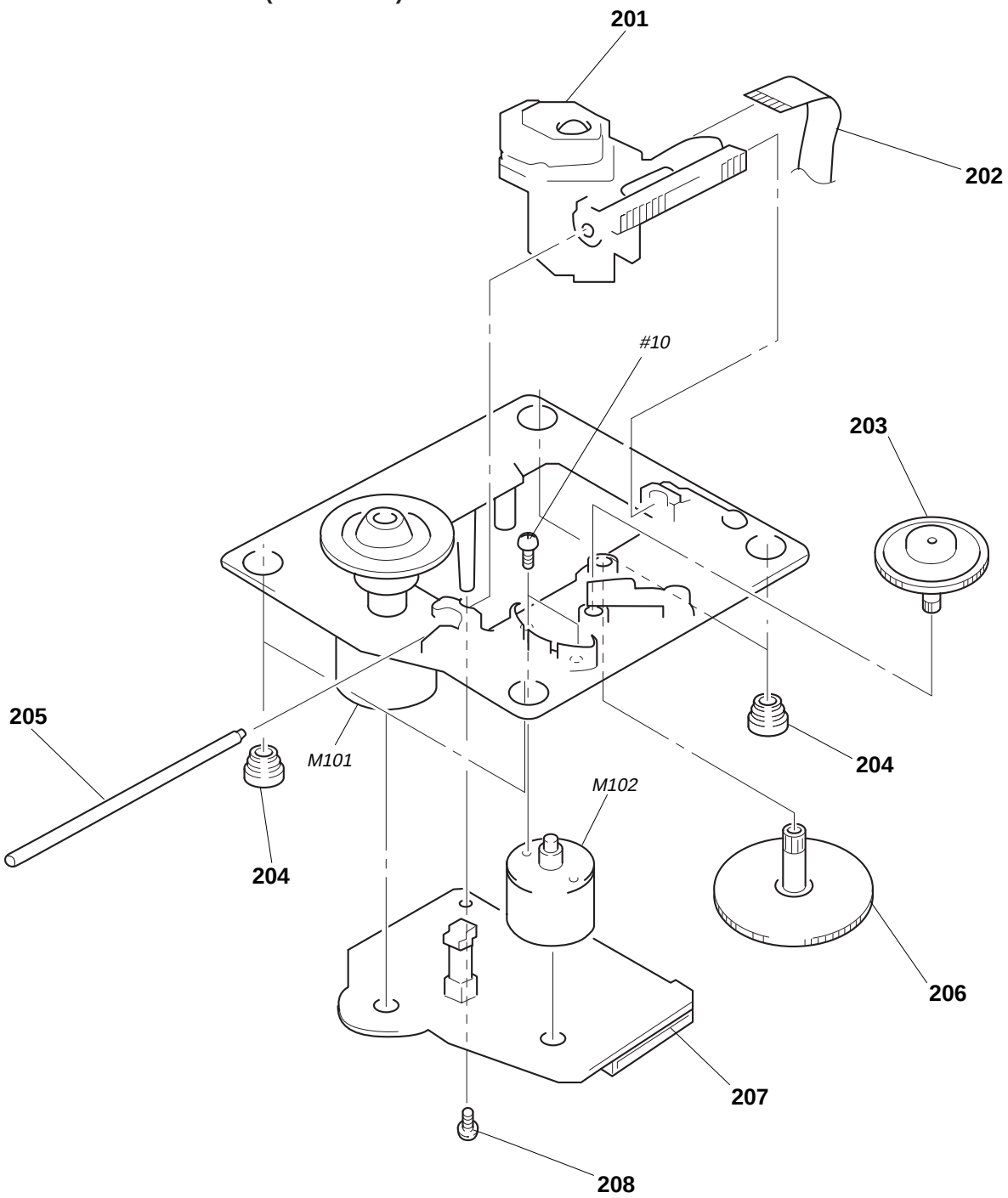
Ref. No.	Part No.	Description	Remark
108	X-4949-449-1	FRONT PANEL SUB ASSY	
109	4-997-362-01	DOOR LATCH	
110	1-759-548-11	DECK, MECHANICAL	
111	4-997-357-01	GEAR HOLDER	
112	4-997-381-01	LCD HOLDER	
113	4-997-382-01	LIGHT BAR	
114	4-997-383-01	DISPLAY FILTER	
115	4-997-374-01	SOLDER LUG	
Z201	1-803-020-11	DISPLAY PANEL, LIQUID CRYSTAL	

6-4. MECHANISM DECK SECTION (CASSETTE)



Ref. No.	Part No.	Description	Remark
151	1-759-548-11	DECK, MECHANICAL	
152	X-4949-565-1	CONTROL BLK ASSY	
153	X-4949-566-1	CLUTCH BLK ASSY	
154	X-4949-563-1	PLA TE HD BLK ASSY	
155	4-997-983-01	BEL T MAIN	
156	X-4949-568-1	ROLLER PINCH BLK R ASSY	
157	X-4949-569-1	ROLLER PINCH BLK L ASSY	
158	4-997-984-01	F/R BEL T	
159	X-4949-567-1	CLUTCH BLK2 ASSY	
M901	X-4949-564-1	MTR MAIN BLK ASSY (CAPST	AN/REEL)

6-5. BASE UNIT SECTION (BU17-BD19)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
⚠201	8-848-387-01	OPTICAL PICK-UP KSS-213BA/S-N	
202	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
203	4-917-567-01	GEAR (M)	
204	4-951-940-01	INSULATOR (BU)	
205	4-917-565-01	SHAFT, SLED	
206	4-917-564-01	GEAR (P), FLATNESS	
* 207	A-4673-402-B	BD BOARD, COMPLETE	
208	4-951-620-01	SCREW (2.6X8), +BVTP	
M101	X-4950-066-1	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	

BD

SECTION 7
ELECTRICAL PARTS LIST

Note:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: µ , for example:
  uA...: µA..., uPA...: µPA..., uPB...: µPB..., uPC...: µPC..., uPD...: µPD...
- CAPACITORS
  uF : µF
- COILS
  uH : µH
- Abbreviation
  CND : Canadian model
  EE : East European model
  HK : Hong Kong model
  SP : Singapore model
  MY : Malaysia model

Ref. No.	Part No.	Description			Remark
*	A-4673-402-B	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-126-607-11	ELECT CHIP	47uF	20%	4V
C102	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C103	1-164-346-11	CERAMIC CHIP	1uF		16V
C105	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C106	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C107	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C108	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C109	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C111	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C113	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C114	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C117	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C118	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C119	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C120	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C121	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C123	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C124	1-126-607-11	ELECT CHIP	47uF	20%	4V
C125	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C126	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C127	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C128	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C129	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C130	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C131	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C132	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C133	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C134	1-164-346-11	CERAMIC CHIP	1uF		16V
C135	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C136	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C137	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C139	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C140	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C142	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C145	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C146	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C147	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C148	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C149	1-164-346-11	CERAMIC CHIP	1uF		16V
C153	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C154	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
		< CONNECTOR >			
CNU101	1-770-014-11	CONNECTOR, FFC/FPC 16P			
CNU102	1-770-013-11	CONNECTOR, FFC/FPC 19P			
		< IC >			
IC101	8-752-074-34	IC CXA1782CQ			
IC102	8-759-291-06	IC BA6397FP			
IC103	8-752-372-94	IC CXD2507AQ			
IC104	8-759-185-29	IC PCM1710U-B			
		< MOTOR >			
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)			
M102	X-4917-504-1	MOTOR ASSY (SLED)			
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR MSB710-R			
Q102	8-729-424-08	TRANSISTOR UN2111			
Q103	8-729-421-22	TRANSISTOR UN2211			
		< RESISTOR >			
R102	1-216-001-00	METAL CHIP	10	5%	1/10W
R103	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R104	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R105	1-216-093-00	METAL CHIP	68K	5%	1/10W
R106	1-216-093-00	METAL CHIP	68K	5%	1/10W
R107	1-216-093-00	METAL CHIP	68K	5%	1/10W
R108	1-216-093-00	METAL CHIP	68K	5%	1/10W
R109	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R112	1-216-083-00	METAL CHIP	27K	5%	1/10W
R113	1-216-083-00	METAL CHIP	27K	5%	1/10W
R114	1-216-101-00	METAL CHIP	150K	5%	1/10W
R115	1-216-101-00	METAL CHIP	150K	5%	1/10W
R116	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R117	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R118	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R119	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R120	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R121	1-216-114-00	METAL GLAZE	510K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R122	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R123	1-216-099-00	METAL CHIP	120K	5%	1/10W
R124	1-216-091-00	METAL CHIP	56K	5%	1/10W
R125	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R126	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R127	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R128	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R129	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R130	1-216-079-00	METAL CHIP	18K	5%	1/10W
R131	1-216-079-00	METAL CHIP	18K	5%	1/10W
R132	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R133	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R134	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R135	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W
R137	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R138	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R139	1-216-033-00	METAL CHIP	220	5%	1/10W
R140	1-216-081-00	METAL CHIP	22K	5%	1/10W
R141	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R142	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R143	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R144	1-216-073-00	METAL CHIP	10K	5%	1/10W
R145	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R146	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R147	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R148	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R149	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R150	1-216-037-00	METAL CHIP	330	5%	1/10W
R151	1-216-037-00	METAL CHIP	330	5%	1/10W
R152	1-216-037-00	METAL CHIP	330	5%	1/10W
R153	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R154	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R156	1-216-085-00	METAL CHIP	33K	5%	1/10W
R157	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R158	1-216-001-00	METAL CHIP	10	5%	1/10W
		< VARIABLE RESISTOR >			
RV101	1-241-396-11	RES, ADJ, METAL GLAZE 22K			
RV102	1-241-396-11	RES, ADJ, METAL GLAZE 22K			
RV103	1-241-396-11	RES, ADJ, METAL GLAZE 22K			
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)			
		< VIBRATOR >			
X101	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)			

****

Ref. No.	Part No.	Description			Remark
*	A-4407-244-A	CD DOOR SW BOARD, COMPLETE			
		**********			
		< SWITCH >			
S211	1-771-298-11	SWITCH, PUSH (CD DOOR)			

****

*	A-4407-247-A	DISPLAY BOARD, COMPLETE (AEP,UK,EE,CIS)			
		**********			
*	A-4407-248-A	DISPLAY BOARD, COMPLETE (US,CND)			
		**********			
*	A-4407-249-A	DISPLAY BOARD, COMPLETE (MY,SP,HK)			
		**********			
	4-997-381-01	LCD HOLDER			
	4-997-382-01	LIGHT BAR			
	4-997-383-01	DISPLAY FILTER			
		< CAPACITOR >			
C200	1-126-514-11	ELECT	22uF	20%	16V
C201	1-102-962-00	CERAMIC	30PF	5%	50V
C202	1-102-953-00	CERAMIC	18PF	5%	50V
C203	1-136-165-00	FILM	0.1uF	5%	50V
C204	1-136-165-00	FILM	0.1uF	5%	50V
C205	1-126-916-11	ELECT	1000uF	20%	6.3V
C206	1-136-165-00	FILM	0.1uF	5%	50V
C207	1-136-165-00	FILM	0.1uF	5%	50V
C208	1-136-165-00	FILM	0.1uF	5%	50V
C209	1-136-165-00	FILM	0.1uF	5%	50V
C212	1-136-165-00	FILM	0.1uF	5%	50V
C213	1-126-177-11	ELECT	100uF	20%	10V
C220	1-136-165-00	FILM	0.1uF	5%	50V
C230	1-102-934-00	CERAMIC	1.0PF	+-0.25PF	50V
C232	1-126-177-11	ELECT	100uF	20%	10V
		< CONNECTOR >			
* CN1	1-568-858-11	SOCKET, CONNECTOR 15P (AEP,UK,EE,CIS)			
* CN1	1-784-568-11	CONNECTOR, FFC 13P (US,CND,SP,MY,HK)			
		< DIODE >			
D201	8-719-920-76	DIODE 1S2076			
D202	8-719-920-76	DIODE 1S2076			
D203	8-719-920-76	DIODE 1S2076			
D210	8-719-920-76	DIODE 1S2076			
D211	8-719-920-76	DIODE 1S2076			
D212	8-719-920-76	DIODE 1S2076			
		< IC >			
IC201	8-759-497-90	IC TC9613			
IC202	8-749-014-39	IC PIC-21041TH2			
IC203	8-759-165-80	IC PST600C-T			
		< COIL >			
L201	1-410-521-11	INDUCTOR 100uH			

DISPLAY | FUN/SURROUND

Ref. No.	Part No.	Description			Remark
		< DIODE >			
LD201	8-719-989-30	DIODE EL204HD (WIDE)			
LD202	8-719-989-30	DIODE EL204HD (NEAR F)			
LD203	8-719-989-30	DIODE EL204HD (DBFB)			
LD204	8-719-989-30	DIODE EL204HD (CD SYNC)			
LD205	8-719-989-30	DIODE EL204HD (REC)			
		< CONNECTOR >			
M201	1-784-348-11	CONNECTOR 12P			
M202	1-784-347-11	CONNECTOR 10P			
M203	1-784-349-11	CONNECTOR 25P			
		< LAMP >			
PL201	1-517-743-11	LAMP			
		< TRANSISTOR >			
Q201	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q204	8-729-900-63	TRANSISTOR DTA124ES			
Q205	8-729-900-63	TRANSISTOR DTA124ES			
Q206	8-729-900-63	TRANSISTOR DTA124ES			
Q207	8-729-900-63	TRANSISTOR DTA124ES			
Q208	8-729-900-63	TRANSISTOR DTA124ES			
		< RESISTOR >			
R200	1-249-429-11	CARBON	10K	5%	1/4W
R201	1-249-435-11	CARBON	33K	5%	1/4W
R202	1-249-424-11	CARBON	3.9K	5%	1/4W F
R203	1-249-429-11	CARBON	10K	5%	1/4W
R204	1-249-437-11	CARBON	47K	5%	1/4W
R205	1-249-429-11	CARBON	10K	5%	1/4W
R208	1-249-437-11	CARBON	47K	5%	1/4W
R209	1-249-429-11	CARBON	10K	5%	1/4W
R210	1-249-429-11	CARBON	10K	5%	1/4W
R222	1-249-429-11	CARBON	10K	5%	1/4W
R223	1-249-429-11	CARBON	10K	5%	1/4W
R225	1-249-429-11	CARBON	10K	5%	1/4W
R226	1-249-429-11	CARBON	10K	5%	1/4W
R227	1-249-429-11	CARBON	10K	5%	1/4W
R229	1-249-429-11	CARBON	10K	5%	1/4W
R230	1-249-429-11	CARBON	10K	5%	1/4W
R239	1-249-425-11	CARBON	4.7K	5%	1/4W F
R240	1-249-425-11	CARBON	4.7K	5%	1/4W F
R246	1-249-429-11	CARBON	10K	5%	1/4W
R247	1-249-429-11	CARBON	10K	5%	1/4W
R248	1-249-429-11	CARBON	10K	5%	1/4W
R250	1-247-807-31	CARBON	100	5%	1/4W
R253	1-249-425-11	CARBON	4.7K	5%	1/4W F (US,CND,AEP,UK,EE,CIS)
R254	1-249-420-11	CARBON	1.8K	5%	1/4W F (US,CND)
R254	1-249-418-11	CARBON	1.2K	5%	1/4W F (AEP,UK,EE,CIS)
R255	1-249-413-11	CARBON	470	5%	1/4W F
R256	1-249-412-11	CARBON	390	5%	1/4W F
R257	1-249-412-11	CARBON	390	5%	1/4W F
R258	1-249-414-11	CARBON	560	5%	1/4W F
R259	1-249-415-11	CARBON	680	5%	1/4W F

Ref. No.	Part No.	Description			Remark
R260	1-247-828-11	CARBON	750	5%	1/4W
R261	1-249-416-11	CARBON	820	5%	1/4W F
R262	1-249-418-11	CARBON	1.2K	5%	1/4W F (US,CND)
R263	1-249-419-11	CARBON	1.5K	5%	1/4W F
R264	1-247-838-00	CARBON	2K	5%	1/4W
R270	1-249-393-11	CARBON	10	5%	1/4W F
R278	1-249-413-11	CARBON	470	5%	1/4W F
R279	1-249-413-11	CARBON	470	5%	1/4W F
R280	1-249-413-11	CARBON	470	5%	1/4W F
R281	1-249-413-11	CARBON	470	5%	1/4W F
R282	1-249-413-11	CARBON	470	5%	1/4W F
R290	1-249-429-11	CARBON	10K	5%	1/4W
		< SWITCH >			
S200	1-571-760-11	SWITCH, KEY BOARD (POWER)			
S201	1-571-760-11	SWITCH, KEY BOARD (VOLUME +)			
S202	1-571-760-11	SWITCH, KEY BOARD (VOLUME –)			
S203	1-571-760-11	SWITCH, KEY BOARD (TUNING +/▶▶ ▶▶I)			
S204	1-571-760-11	SWITCH, KEY BOARD (TUNING I◀◀ ◀◀/–)			
S205	1-571-760-11	SWITCH, KEY BOARD (BAND ▮▮/FM)			
S206	1-571-760-11	SWITCH, KEY BOARD (BAND AM/■)			
S207	1-571-760-11	SWITCH, KEY BOARD (PLAY ◁ TC)			
S208	1-571-760-11	SWITCH, KEY BOARD (PLAY CD/TC ▷)			
S209	1-571-760-11	SWITCH, KEY BOARD (FUNCTION)			
S210	1-571-760-11	SWITCH, KEY BOARD (SOUND MODE)			
		< VIBRATOR >			
X201	1-767-791-11	VIBRATOR, CRYSTAL (8MHz)			
		< LIQUID CRYSTAL DISPLAY >			
Z201	1-803-020-11	DISPLAY PANEL, LIQUID CRYSTAL			
**********					
*	A-4407-242-A	FUN/SURROUND BOARD, COMPLETE			
		**********			
*	4-997-378-01	PC BOARD BRACKET			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
		< CAPACITOR >			
C307	1-102-074-00	CERAMIC	0.001uF	10%	50V
C308	1-102-074-00	CERAMIC	0.001uF	10%	50V
C309	1-124-907-11	ELECT	10uF	20%	50V
C310	1-126-963-11	ELECT	4.7uF	20%	50V
C311	1-161-772-11	CERAMIC	0.1uF	10%	25V
C312	1-161-772-11	CERAMIC	0.1uF	10%	25V
C313	1-126-963-11	ELECT	4.7uF	20%	50V
C314	1-126-963-11	ELECT	4.7uF	20%	50V
C315	1-124-907-11	ELECT	10uF	20%	50V
C316	1-124-907-11	ELECT	10uF	20%	50V
C317	1-124-443-00	ELECT	100uF	20%	10V
C318	1-124-443-00	ELECT	100uF	20%	10V
C319	1-102-114-00	CERAMIC	470PF	10%	50V
C320	1-102-114-00	CERAMIC	470PF	10%	50V
C351	1-137-378-11	FILM	0.22uF	5%	50V
C352	1-137-378-11	FILM	0.22uF	5%	50V

Ref. No.	Part No.	Description			Remark
C353	1-137-378-11	FILM	0.22uF	5%	50V
C354	1-137-378-11	FILM	0.22uF	5%	50V
C355	1-137-371-11	FILM	0.015uF	5%	50V
C356	1-137-365-11	FILM	0.0015uF	5%	50V
C357	1-130-489-00	MYLAR	0.033uF	5%	50V
C358	1-137-367-11	FILM	0.0033uF	5%	50V
C359	1-130-481-00	MYLAR	0.0068uF	5%	50V
C360	1-137-367-11	FILM	0.0033uF	5%	50V
C361	1-130-481-00	MYLAR	0.0068uF	5%	50V
C362	1-137-365-11	FILM	0.0015uF	5%	50V
C363	1-137-365-11	FILM	0.0015uF	5%	50V
C365	1-124-907-11	ELECT	10uF	20%	50V
C366	1-124-907-11	ELECT	10uF	20%	50V
C367	1-104-664-11	ELECT	47uF	20%	16V
C368	1-124-443-00	ELECT	100uF	20%	10V
C369	1-124-907-11	ELECT	10uF	20%	50V
C370	1-124-907-11	ELECT	10uF	20%	50V
C398	1-161-772-11	CERAMIC	0.1uF	10%	25V
		< DIODE >			
D351	8-719-920-76	DIODE 1S2076			
D352	8-719-920-76	DIODE 1S2076			
D353	8-719-920-76	DIODE 1S2076			
		< IC >			
IC301	8-759-000-48	IC MC14052BCP			
IC302	8-759-505-55	IC NJM4558L			
IC351	8-759-497-89	IC TA-2041F			
		< JACK >			
JK301	1-784-362-11	JACK, PIN 4P (MD IN/OUT)			
		< CONNECTOR >			
M301	1-573-834-11	CONNECTOR, BOARD TO BOARD 20P			
		< TRANSISTOR >			
Q301	8-729-231-55	TRANSISTOR 2SC2878-AB			
Q302	8-729-231-55	TRANSISTOR 2SC2878-AB			
Q303	8-729-201-53	TRANSISTOR 2SA1015-GR			
		< RESISTOR >			
R301	1-249-417-11	CARBON	1K	5%	1/4W F
R302	1-249-417-11	CARBON	1K	5%	1/4W F
R303	1-249-417-11	CARBON	1K	5%	1/4W F
R304	1-249-417-11	CARBON	1K	5%	1/4W F
R305	1-249-417-11	CARBON	1K	5%	1/4W F
R306	1-249-417-11	CARBON	1K	5%	1/4W F
R307	1-249-425-11	CARBON	4.7K	5%	1/4W F
R308	1-249-425-11	CARBON	4.7K	5%	1/4W F
R309	1-249-421-11	CARBON	2.2K	5%	1/4W F
R310	1-249-421-11	CARBON	2.2K	5%	1/4W F
R311	1-249-441-11	CARBON	100K	5%	1/4W
R312	1-249-441-11	CARBON	100K	5%	1/4W
R313	1-249-441-11	CARBON	100K	5%	1/4W
R314	1-249-441-11	CARBON	100K	5%	1/4W
R315	1-249-441-11	CARBON	100K	5%	1/4W
R316	1-249-441-11	CARBON	100K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R317	1-249-425-11	CARBON	4.7K	5%	1/4W F
R318	1-249-425-11	CARBON	4.7K	5%	1/4W F
R319	1-249-441-11	CARBON	100K	5%	1/4W
R320	1-249-441-11	CARBON	100K	5%	1/4W
R321	1-247-903-00	CARBON	1M	5%	1/4W
R322	1-247-903-00	CARBON	1M	5%	1/4W
R323	1-249-417-11	CARBON	1K	5%	1/4W F
R324	1-249-417-11	CARBON	1K	5%	1/4W F
R329	1-247-815-91	CARBON	220	5%	1/4W
R330	1-247-815-91	CARBON	220	5%	1/4W
R335	1-249-425-11	CARBON	4.7K	5%	1/4W F
R336	1-249-425-11	CARBON	4.7K	5%	1/4W F
R337	1-249-417-11	CARBON	1K	5%	1/4W F
R338	1-249-417-11	CARBON	1K	5%	1/4W F
R339	1-249-441-11	CARBON	100K	5%	1/4W
R340	1-249-441-11	CARBON	100K	5%	1/4W
R341	1-249-437-11	CARBON	47K	5%	1/4W
R342	1-249-437-11	CARBON	47K	5%	1/4W
R343	1-249-425-11	CARBON	4.7K	5%	1/4W F
R344	1-249-425-11	CARBON	4.7K	5%	1/4W F
R345	1-249-437-11	CARBON	47K	5%	1/4W
R346	1-249-437-11	CARBON	47K	5%	1/4W
R347	1-249-425-11	CARBON	4.7K	5%	1/4W F
R348	1-249-421-11	CARBON	2.2K	5%	1/4W F
R351	1-249-430-11	CARBON	12K	5%	1/4W
R352	1-249-430-11	CARBON	12K	5%	1/4W
R353	1-249-431-11	CARBON	15K	5%	1/4W
R354	1-249-431-11	CARBON	15K	5%	1/4W
R355	1-249-429-11	CARBON	10K	5%	1/4W
R356	1-249-432-11	CARBON	18K	5%	1/4W
R357	1-249-425-11	CARBON	4.7K	5%	1/4W F
R358	1-249-425-11	CARBON	4.7K	5%	1/4W F
R359	1-249-437-11	CARBON	47K	5%	1/4W
R360	1-249-437-11	CARBON	47K	5%	1/4W
R361	1-249-417-11	CARBON	1K	5%	1/4W F
R362	1-249-417-11	CARBON	1K	5%	1/4W F
R363	1-249-429-11	CARBON	10K	5%	1/4W
R364	1-249-429-11	CARBON	10K	5%	1/4W
R367	1-249-417-11	CARBON	1K	5%	1/4W F
R368	1-249-417-11	CARBON	1K	5%	1/4W F
R369	1-249-421-11	CARBON	2.2K	5%	1/4W F
R370	1-249-421-11	CARBON	2.2K	5%	1/4W F
⚠R551	1-202-725-00	SOLID	3.3M	10%	1/2W (US,CND)

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*	A-4407-245-A	RELAY BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C210	1-161-051-00	CERAMIC	0.01uF	10%	50V
C211	1-126-941-11	ELECT	470uF	20%	16V
C214	1-124-472-11	ELECT	470uF	20%	10V
C215	1-102-106-00	CERAMIC	100PF	10%	50V
C216	1-102-106-00	CERAMIC	100PF	10%	50V
C217	1-161-051-00	CERAMIC	0.01uF	10%	50V
C218	1-124-472-11	ELECT	470uF	20%	10V

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Replace only with part number specified.

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RELAY | TAPE PREAMP

Ref. No.	Part No.	Description			Remark
C229	1-102-074-00	CERAMIC	0.001uF	10%	50V
C235	1-126-233-11	ELECT	22uF	20%	50V
C236	1-126-233-11	ELECT	22uF	20%	50V
C241	1-102-125-00	CERAMIC	4700PF	10%	50V
C242	1-102-125-00	CERAMIC	4700PF	10%	50V
C245	1-161-772-11	CERAMIC	0.1uF	10%	25V
C246	1-126-942-61	ELECT	1000uF	20%	16V
C789	1-161-051-00	CERAMIC	0.01uF	10%	50V
C797	1-161-051-00	CERAMIC	0.01uF	10%	50V
C799	1-161-051-00	CERAMIC	0.01uF	10%	50V
		< CONNECTOR >			
CNU102	1-770-067-11	CONNECTOR, FFC/FPC 19P			
		< DIODE >			
D200	8-719-911-55	DIODE U05G			
D206	8-719-911-55	DIODE U05G			
D207	8-719-911-55	DIODE U05G			
D208	8-719-920-76	DIODE 1S2076			
D209	8-719-920-76	DIODE 1S2076			
D770	8-719-911-55	DIODE U05G			
D771	8-719-911-55	DIODE U05G			
		< COIL >			
L203	1-408-096-00	INDUCTOR 470uH			
		< CONNECTOR >			
* M704	1-564-715-11	PIN, CONNECTOR (SMALL TYPE)13P			
		< TRANSISTOR >			
Q202	8-729-029-86	TRANSISTOR DTC124ESA			
Q203	8-729-200-36	TRANSISTOR 2SA966-Y			
Q213	8-729-029-86	TRANSISTOR DTC124ESA			
Q214	8-729-029-86	TRANSISTOR DTC124ESA			
Q215	8-729-029-86	TRANSISTOR DTC124ESA			
Q770	8-729-200-36	TRANSISTOR 2SA966-Y			
Q771	8-729-200-36	TRANSISTOR 2SA966-Y			
Q772	8-729-029-86	TRANSISTOR DTC124ESA			
Q773	8-729-029-86	TRANSISTOR DTC124ESA			
		< RESISTOR >			
R206	1-249-430-11	CARBON	12K	5%	1/4W
R207	1-249-418-11	CARBON	1.2K	5%	1/4W F
R213	1-247-807-31	CARBON	100	5%	1/4W
R214	1-247-807-31	CARBON	100	5%	1/4W
R215	1-247-807-31	CARBON	100	5%	1/4W
R217	1-247-807-31	CARBON	100	5%	1/4W
R218	1-247-807-31	CARBON	100	5%	1/4W
R219	1-247-807-31	CARBON	100	5%	1/4W
R220	1-247-807-31	CARBON	100	5%	1/4W
R221	1-247-807-31	CARBON	100	5%	1/4W
R224	1-247-843-11	CARBON	3.3K	5%	1/4W
R231	1-249-429-11	CARBON	10K	5%	1/4W
R232	1-249-439-11	CARBON	68K	5%	1/4W
R233	1-249-429-11	CARBON	10K	5%	1/4W
R234	1-249-429-11	CARBON	10K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R235	1-249-429-11	CARBON	10K	5%	1/4W
R236	1-249-429-11	CARBON	10K	5%	1/4W
⚠ R237	1-212-966-00	FUSIBLE	22	5%	1/2W F
R245	1-249-429-11	CARBON	10K	5%	1/4W
R265	1-249-429-11	CARBON	10K	5%	1/4W
R266	1-249-429-11	CARBON	10K	5%	1/4W
R267	1-249-429-11	CARBON	10K	5%	1/4W
R268	1-249-429-11	CARBON	10K	5%	1/4W
R271	1-249-429-11	CARBON	10K	5%	1/4W
R288	1-249-429-11	CARBON	10K	5%	1/4W
R289	1-249-429-11	CARBON	10K	5%	1/4W
R291	1-249-429-11	CARBON	10K	5%	1/4W
R295	1-249-415-11	CARBON	680	5%	1/4W F
R296	1-249-415-11	CARBON	680	5%	1/4W F
R298	1-249-435-11	CARBON	33K	5%	1/4W
R299	1-249-435-11	CARBON	33K	5%	1/4W
R771	1-249-425-11	CARBON	4.7K	5%	1/4W F
R772	1-249-434-11	CARBON	27K	5%	1/4W
R773	1-247-856-00	CARBON	11K	5%	1/4W
R774	1-249-430-11	CARBON	12K	5%	1/4W
R775	1-249-430-11	CARBON	12K	5%	1/4W
R776	1-249-418-11	CARBON	1.2K	5%	1/4W F
R777	1-249-418-11	CARBON	1.2K	5%	1/4W F
		< VARIABLE RESISTOR >			
VR770	1-230-497-11	RES, ADJ, CARBON 22K			
		< CONNECTOR >			
* W103	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
W201	1-784-351-11	CONNECTOR 12P			
W202	1-784-350-11	CONNECTOR 10P			
W203	1-784-352-11	CONNECTOR 25P			
W301	1-573-852-11	CONNECTOR, BOARD TO BOARD 20P			
W703	1-766-718-11	CONNECTOR, BOARD TO BOARD 17P			
W901	1-766-718-11	CONNECTOR, BOARD TO BOARD 17P			

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*	A-4407-243-A	TAPE PREAMP BOARD, COMPLETE			
		**********			
*	4-997-378-01	PC BOARD BRACKET			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
		< CAPACITOR >			
C483	1-161-051-00	CERAMIC	0.01uF	10%	50V
C484	1-161-051-00	CERAMIC	0.01uF	10%	50V
C700	1-161-051-00	CERAMIC	0.01uF	10%	50V
C703	1-102-113-00	CERAMIC	390PF	10%	50V
C704	1-102-113-00	CERAMIC	390PF	10%	50V
C705	1-104-666-11	ELECT	220uF	20%	10V
C706	1-104-666-11	ELECT	220uF	20%	10V
C707	1-102-106-00	CERAMIC	100PF	10%	50V
C708	1-102-106-00	CERAMIC	100PF	10%	50V
C709	1-137-372-11	FILM	0.022uF	5%	50V
C710	1-137-372-11	FILM	0.022uF	5%	50V
C711	1-124-907-11	ELECT	10uF	20%	50V
C712	1-124-907-11	ELECT	10uF	20%	50V

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Ref. No.	Part No.	Description			Remark
C713	1-124-443-00	ELECT	100uF	20%	10V
C714	1-104-665-11	ELECT	100uF	20%	16V
C715	1-124-443-00	ELECT	100uF	20%	10V
C716	1-137-399-11	FILM	0.1uF	5%	50V
C717	1-124-907-11	ELECT	10uF	20%	50V
C719	1-161-051-00	CERAMIC	0.01uF	10%	50V
C720	1-161-051-00	CERAMIC	0.01uF	10%	50V
C721	1-102-981-00	CERAMIC	300PF	5%	50V
C722	1-102-981-00	CERAMIC	300PF	5%	50V
C723	1-102-112-00	CERAMIC	330PF	10%	50V
C724	1-102-112-00	CERAMIC	330PF	10%	50V
C725	1-102-112-00	CERAMIC	330PF	10%	50V
C726	1-102-112-00	CERAMIC	330PF	10%	50V
C727	1-104-993-91	FILM	0.01uF	5%	200V
C728	1-124-907-11	ELECT	10uF	20%	50V
C729	1-137-371-11	FILM	0.015uF	5%	50V
C730	1-137-367-11	FILM	0.0033uF	5%	50V
C731	1-137-367-11	FILM	0.0033uF	5%	50V
C732	1-137-367-11	FILM	0.0033uF	5%	50V
C741	1-124-907-11	ELECT	10uF	20%	50V
C742	1-124-907-11	ELECT	10uF	20%	50V
C743	1-137-368-11	FILM	0.0047uF	5%	50V
C744	1-137-368-11	FILM	0.0047uF	5%	50V
C745	1-102-125-00	CERAMIC	4700PF	10%	50V
C746	1-102-125-00	CERAMIC	4700PF	10%	50V
C747	1-137-399-11	FILM	0.1uF	5%	50V
C748	1-137-399-11	FILM	0.1uF	5%	50V
C749	1-124-907-11	ELECT	10uF	20%	50V
C750	1-124-907-11	ELECT	10uF	20%	50V
C751	1-124-903-11	ELECT	1uF	20%	50V
C752	1-124-903-11	ELECT	1uF	20%	50V
C753	1-124-907-11	ELECT	10uF	20%	50V
C754	1-124-907-11	ELECT	10uF	20%	50V
C756	1-161-051-00	CERAMIC	0.01uF	10%	50V
C758	1-126-962-11	ELECT	3.3uF	20%	50V
C761	1-124-443-00	ELECT	100uF	20%	10V
C762	1-124-443-00	ELECT	100uF	20%	10V
C798	1-161-772-11	CERAMIC	0.1uF	10%	25V
C799	1-102-074-00	CERAMIC	0.001uF	10%	50V
C801	1-124-907-11	ELECT	10uF	20%	50V
C802	1-161-772-11	CERAMIC	0.1uF	10%	25V
		< IC >			
IC701	8-759-508-69	IC BA3126N			
IC702	8-759-261-93	IC NJM4580LD			
IC703	8-759-363-21	IC HA12203NT			
JK800	8-749-923-04	IC TOTX178 (OPTICAL)			
		< JACK >			
JK900	1-784-361-11	JACK (SMALL TYPE)(🎧)			
		< COIL >			
L701	1-410-774-11	INDUCTOR 8.2mH			
L702	1-410-774-11	INDUCTOR 8.2mH			
L703	1-431-707-11	TRANSFORMER, BIAS OSCILLATION			
L704	1-410-521-11	INDUCTOR 100uH			

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
* M701	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P			
* M703	1-766-720-21	CONNECTOR, BOARD TO BOARD 17P			
		< TRANSISTOR >			
Q702	8-729-194-57	TRANSISTOR 2SC945-P			
Q704	8-729-194-57	TRANSISTOR 2SC945-P			
Q705	8-729-194-57	TRANSISTOR 2SC945-P			
Q706	8-729-141-83	TRANSISTOR 2SB1094-LK			
Q707	8-729-194-57	TRANSISTOR 2SC945-P			
		< RESISTOR >			
R485	1-249-395-11	CARBON	15	5%	1/4W F
R486	1-249-395-11	CARBON	15	5%	1/4W F
R701	1-247-807-31	CARBON	100	5%	1/4W
R702	1-247-807-31	CARBON	100	5%	1/4W
R703	1-247-889-00	CARBON	270K	5%	1/4W
R704	1-247-889-00	CARBON	270K	5%	1/4W
R705	1-249-404-00	CARBON	82	5%	1/4W F
R706	1-249-404-00	CARBON	82	5%	1/4W F
R707	1-247-863-91	CARBON	22K	5%	1/4W
R708	1-247-863-91	CARBON	22K	5%	1/4W
R709	1-247-882-11	CARBON	130K	5%	1/4W
R710	1-247-882-11	CARBON	130K	5%	1/4W
R711	1-247-850-11	CARBON	6.2K	5%	1/4W
R712	1-247-850-11	CARBON	6.2K	5%	1/4W
R713	1-247-815-91	CARBON	220	5%	1/4W
R714	1-247-815-91	CARBON	220	5%	1/4W
R715	1-249-437-11	CARBON	47K	5%	1/4W
R716	1-247-815-91	CARBON	220	5%	1/4W
R717	1-249-430-11	CARBON	12K	5%	1/4W
R718	1-249-430-11	CARBON	12K	5%	1/4W
R719	1-249-389-11	CARBON	4.7	5%	1/4W F
R720	1-249-389-11	CARBON	4.7	5%	1/4W F
R721	1-247-863-91	CARBON	22K	5%	1/4W
R722	1-247-863-91	CARBON	22K	5%	1/4W
R723	1-249-381-11	CARBON	1	5%	1/4W F
R724	1-247-863-91	CARBON	22K	5%	1/4W
R725	1-249-429-11	CARBON	10K	5%	1/4W
R741	1-249-435-11	CARBON	33K	5%	1/4W
R742	1-247-863-91	CARBON	22K	5%	1/4W
R743	1-249-417-11	CARBON	1K	5%	1/4W F
R744	1-249-417-11	CARBON	1K	5%	1/4W F
R745	1-249-426-11	CARBON	5.6K	5%	1/4W
R746	1-249-426-11	CARBON	5.6K	5%	1/4W
R749	1-249-441-11	CARBON	100K	5%	1/4W
R750	1-247-891-00	CARBON	330K	5%	1/4W
R751	1-249-429-11	CARBON	10K	5%	1/4W
R752	1-249-434-11	CARBON	27K	5%	1/4W
R753	1-249-429-11	CARBON	10K	5%	1/4W
R754	1-249-426-11	CARBON	5.6K	5%	1/4W
R757	1-249-429-11	CARBON	10K	5%	1/4W
R758	1-247-840-00	CARBON	2.4K	5%	1/4W
R759	1-249-432-11	CARBON	18K	5%	1/4W
R760	1-247-840-00	CARBON	2.4K	5%	1/4W
R761	1-247-866-11	CARBON	30K	5%	1/4W
R762	1-247-866-11	CARBON	30K	5%	1/4W

TAPE PREAMP VOL/POWER

Ref. No.	Part No.	Description			Remark
R763	1-249-437-11	CARBON	47K	5%	1/4W
R765	1-249-437-11	CARBON	47K	5%	1/4W
R766	1-249-437-11	CARBON	47K	5%	1/4W
		< VARIABLE RESISTOR >			
VR701	1-230-499-11	RES, ADJ, CARBON 100K			
VR702	1-230-499-11	RES, ADJ, CARBON 100K			
VR703	1-230-497-11	RES, ADJ, CARBON 22K			
VR704	1-230-497-11	RES, ADJ, CARBON 22K			
VR705	1-230-495-11	RES, ADJ, CARBON 2K			
VR706	1-230-495-11	RES, ADJ, CARBON 2K			
**********					
*	A-4407-239-A	VOL/POWER BOARD, COMPLETE			
		**********			
					(AEP,UK,EE,CIS)
*	A-4407-240-A	VOL/POWER BOARD, COMPLETE (US,CND)			
		**********			
*	A-4407-241-A	VOL/POWER BOARD, COMPLETE (MY,SP,HK)			
		**********			
	1-533-293-11	FUSE HOLDER			
*	4-997-378-01	PC BOARD BRACKET			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S			
		< CAPACITOR >			
C403	1-136-173-00	FILM	0.47uF	5%	50V
C404	1-136-173-00	FILM	0.47uF	5%	50V
C461	1-126-960-11	ELECT	1uF	20%	50V
C462	1-126-960-11	ELECT	1uF	20%	50V
C463	1-137-364-11	FILM	0.001uF	5%	50V
C464	1-137-364-11	FILM	0.001uF	5%	50V
C465	1-137-378-11	FILM	0.22uF	5%	50V
C466	1-137-378-11	FILM	0.22uF	5%	50V
C469	1-126-933-11	ELECT	100uF	20%	16V
C470	1-126-925-11	ELECT	470uF	20%	10V
C471	1-162-851-11	CERAMIC	0.1uF	10%	16V
C475	1-126-964-11	ELECT	10uF	20%	50V
C476	1-126-964-11	ELECT	10uF	20%	50V
C477	1-137-399-11	FILM	0.1uF	5%	50V
C478	1-137-399-11	FILM	0.1uF	5%	50V
C479	1-126-948-11	ELECT	100uF	20%	35V
C480	1-126-948-11	ELECT	100uF	20%	35V
C481	1-102-106-00	CERAMIC	100PF	10%	50V
C482	1-102-106-00	CERAMIC	100PF	10%	50V
C483A	1-124-443-00	ELECT	100uF	20%	10V
C485	1-102-106-00	CERAMIC	100PF	10%	50V
C486	1-102-106-00	CERAMIC	100PF	10%	50V
C488	1-126-924-11	ELECT	330uF	20%	10V
C489	1-161-063-00	CERAMIC	0.1uF	10%	50V
C490	1-126-963-11	ELECT	4.7uF	20%	50V
C491	1-126-963-11	ELECT	4.7uF	20%	50V
C502	1-102-129-00	CERAMIC	0.01uF	10%	50V
C503	1-102-129-00	CERAMIC	0.01uF	10%	50V
C508	1-126-964-11	ELECT	10uF	20%	50V
C509	1-126-947-11	ELECT	47uF	20%	35V

Ref. No.	Part No.	Description			Remark
C510	1-126-943-11	ELECT	2200uF	20%	25V
C511	1-126-951-11	ELECT	470uF	20%	35V
C512	1-126-924-11	ELECT	330uF	20%	10V
C513	1-126-924-11	ELECT	330uF	20%	10V
C514	1-126-933-11	ELECT	100uF	20%	16V
C515	1-126-933-11	ELECT	100uF	20%	16V
C516	1-162-851-11	CERAMIC	0.1uF	10%	16V
C517	1-162-851-11	CERAMIC	0.1uF	10%	16V
C518	1-162-851-11	CERAMIC	0.1uF	10%	16V
C519	1-126-923-11	ELECT	220uF	20%	10V
C520	1-126-923-11	ELECT	220uF	20%	10V
C521	1-162-851-11	CERAMIC	0.1uF	10%	16V
C522	1-126-924-11	ELECT	330uF	20%	10V
C523	1-126-924-11	ELECT	330uF	20%	10V
C525	1-126-924-11	ELECT	330uF	20%	10V
C526	1-126-924-11	ELECT	330uF	20%	10V
C527	1-162-851-11	CERAMIC	0.1uF	10%	16V
C528	1-126-924-11	ELECT	330uF	20%	10V
C529	1-126-933-11	ELECT	100uF	20%	16V
C530	1-162-851-11	CERAMIC	0.1uF	10%	16V
C531	1-162-851-11	CERAMIC	0.1uF	10%	16V
C532	1-126-933-11	ELECT	100uF	20%	16V
C999	1-161-772-11	CERAMIC	0.1uF	10%	25V
		< DIODE >			
D401	8-719-920-76	DIODE 1S2076			
D402	8-719-920-76	DIODE 1S2076			
D487	8-719-200-02	DIODE 10E2			
D502	8-719-067-67	DIODE W02G			
D503	8-719-001-64	DIODE UZL-12L2			
D504	8-719-910-25	DIODE HZ12B2L			
D506	8-719-001-85	DIODE UZL-12H3			
D507	8-719-001-76	DIODE UZL-12M3			
D508	8-719-001-42	DIODE UZL-11M1			
D509	8-719-935-81	DIODE UZL-7L2			
D510	8-719-200-02	DIODE 10E2			
D511	8-719-920-76	DIODE 1S2076			
		< FUSE >			
⚠F501	1-532-350-11	FUSE, TIME-LAG (T4AL 250V)			
					(AEP,UK,EE,CIS,MY,SP,HK)
⚠F501	1-532-746-11	FUSE, GLASS TUBE (4A 125V)(US,CND)			
⚠F502	1-532-259-11	FUSE, TIME-LAG (T1.6AL 250V)			
					(AEP,UK,EE,CIS,MY,SP,HK)
⚠F502	1-532-742-11	FUSE, GLASS TUBE (1.6A 125V)(US,CND)			
⚠F503	1-532-259-11	FUSE, TIME-LAG (T1.6AL 250V)			
					(AEP,UK,EE,CIS,MY,SP,HK)
⚠F503	1-532-742-11	FUSE, GLASS TUBE (1.6A 125V)(US,CND)			
⚠F504	1-532-350-11	FUSE, TIME-LAG (T4AL 250V)			
					(AEP,UK,EE,CIS,MY,SP,HK)
⚠F504	1-532-746-11	FUSE, GLASS TUBE (4A 125V)(US,CND)			
		< IC >			
IC461	8-759-497-88	IC TC9260P			
IC472	8-759-261-93	IC NJM4580LD			
IC501	8-759-701-57	IC NJM78M06FA			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
		< JACK >			
JK901	1-784-353-11	JACK (DIN)(SPEAKER L)			
JK902	1-784-353-11	JACK (DIN)(SPEAKER R)			
		< CONNECTOR >			
M501	1-564-234-11	PLUG, CONNECTOR (PIN CONTACT)8P			
* M901	1-766-720-21	CONNECTOR, BOARD TO BOARD 17P			
M902	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
		< TRANSISTOR >			
Q486	8-729-201-53	TRANSISTOR 2SA1015-GR			
Q487	8-729-231-55	TRANSISTOR 2SC2878-AB			
Q488	8-729-231-55	TRANSISTOR 2SC2878-AB			
Q501	8-729-281-53	TRANSISTOR 2SC1815-GR			
Q502	8-729-201-53	TRANSISTOR 2SA1015-GR			
Q503	8-729-201-53	TRANSISTOR 2SA1015-GR			
Q504	8-729-209-15	TRANSISTOR 2SD2012			
Q505	4-997-377-01	ISOLATION FILM			
Q505	8-729-017-51	TRANSISTOR 2SB632K-E			
Q506	8-729-281-53	TRANSISTOR 2SC1815-GR			
Q507	4-997-377-01	ISOLATION FILM			
Q507	8-729-188-23	TRANSISTOR 2SD882-P			
Q508	4-997-377-01	ISOLATION FILM			
Q508	8-729-188-23	TRANSISTOR 2SD882-P			
Q509	4-997-377-01	ISOLATION FILM			
Q509	8-729-188-23	TRANSISTOR 2SD882-P			
Q510	8-729-017-51	TRANSISTOR 2SB632K-E			
Q511	8-729-201-53	TRANSISTOR 2SA1015-GR			
Q512	8-729-265-52	TRANSISTOR 2SC2655			
		< RESISTOR >			
R457	1-247-863-91	CARBON	22K	5%	1/4W
R458	1-247-863-91	CARBON	22K	5%	1/4W
R461	1-249-429-11	CARBON	10K	5%	1/4W
R462	1-249-429-11	CARBON	10K	5%	1/4W
R463	1-247-895-91	CARBON	470K	5%	1/4W
R464	1-247-895-91	CARBON	470K	5%	1/4W
R465	1-249-425-11	CARBON	4.7K	5%	1/4W F
R466	1-247-815-91	CARBON	220	5%	1/4W
R467	1-249-429-11	CARBON	10K	5%	1/4W
R468	1-249-429-11	CARBON	10K	5%	1/4W
R469	1-249-429-11	CARBON	10K	5%	1/4W
R470	1-249-425-11	CARBON	4.7K	5%	1/4W F
R471	1-249-417-11	CARBON	1K	5%	1/4W F
R472	1-249-417-11	CARBON	1K	5%	1/4W F
R477	1-249-441-11	CARBON	100K	5%	1/4W
R478	1-249-441-11	CARBON	100K	5%	1/4W
R479	1-249-426-11	CARBON	5.6K	5%	1/4W
R480	1-249-426-11	CARBON	5.6K	5%	1/4W
R481	1-249-430-11	CARBON	12K	5%	1/4W
R482	1-249-430-11	CARBON	12K	5%	1/4W
R483	1-249-417-11	CARBON	1K	5%	1/4W F
R484	1-249-417-11	CARBON	1K	5%	1/4W F
R485A	1-249-429-11	CARBON	10K	5%	1/4W
R486A	1-249-429-11	CARBON	10K	5%	1/4W
R491	1-247-843-11	CARBON	3.3K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R492	1-247-843-11	CARBON	3.3K	5%	1/4W
R493	1-249-437-11	CARBON	47K	5%	1/4W
R494	1-249-437-11	CARBON	47K	5%	1/4W
R495	1-249-425-11	CARBON	4.7K	5%	1/4W F
R496	1-249-425-11	CARBON	4.7K	5%	1/4W F
R497	1-249-441-11	CARBON	100K	5%	1/4W
R498	1-249-441-11	CARBON	100K	5%	1/4W
R499	1-247-895-91	CARBON	470K	5%	1/4W
⚠R501	1-213-044-51	FUSIBLE	2.2	5%	1W F
⚠R502	1-212-946-11	FUSIBLE	3.3	5%	1/2W F
R503	1-249-429-11	CARBON	10K	5%	1/4W
R504	1-249-421-11	CARBON	2.2K	5%	1/4W F
R505	1-247-863-91	CARBON	22K	5%	1/4W
R506	1-249-429-11	CARBON	10K	5%	1/4W
R507	1-249-437-11	CARBON	47K	5%	1/4W
R508	1-249-437-11	CARBON	47K	5%	1/4W
R509	1-247-807-31	CARBON	100	5%	1/4W
⚠R510	1-215-869-11	METAL OXIDE	1K	5%	1W F
R511	1-247-863-91	CARBON	22K	5%	1/4W
R512	1-249-431-11	CARBON	15K	5%	1/4W
⚠R514	1-212-853-00	FUSIBLE	6.8	5%	1/4W F
⚠R515	1-213-048-00	FUSIBLE	3.3	5%	1W F
R516	1-249-413-11	CARBON	470	5%	1/4W F
⚠R517	1-213-064-51	FUSIBLE	15	5%	1W F
R518	1-249-413-11	CARBON	470	5%	1/4W F
⚠R519	1-212-946-11	FUSIBLE	3.3	5%	1/2W F
R520	1-249-413-11	CARBON	470	5%	1/4W F
R521	1-249-413-11	CARBON	470	5%	1/4W F
R524	1-249-381-11	CARBON	1	5%	1/4W F
R525	1-247-887-00	CARBON	220K	5%	1/4W
R526	1-249-441-11	CARBON	100K	5%	1/4W
R527	1-249-441-11	CARBON	100K	5%	1/4W
R528	1-249-425-11	CARBON	4.7K	5%	1/4W F
R529	1-249-437-11	CARBON	47K	5%	1/4W
		< RELAY >			
RL501	1-755-242-11	RELAY			

****

MISCELLANEOUS
****

13	1-783-091-11	WIRE (FLAT TYPE)
52	1-693-400-21	FM/AM TUNER (AEP,UK,EE,CIS)
52	1-693-400-31	FM/AM TUNER (US,CND)
52	1-693-400-41	FM/AM TUNER (MY,SP,HK)
⚠54	1-551-478-00	CORD, POWER (POLAR.SPT-2)(US,CND)
⚠54	1-555-750-00	CORD, POWER (AEP,EE,CIS,MY,SP,HK)
⚠54	1-751-535-11	CORD, POWER (UK)
⚠63	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)
65	1-501-659-11	ANTTENA (FM) (US,CND,MY,SP,HK)
66	1-501-985-11	LEAD, ANTTENA (AEP,UK,EE,CIS)
104	1-773-009-11	WIRE (FLAT TYPE) (15 CORE) (AEP,UK,EE,CIS)
104	1-751-688-11	WIRE (FLAT TYPE) (13 CORE) (US,CND,MY,SP,HK)
110	1-759-548-11	DECK, MECHANICAL
151	1-759-548-11	DECK, MECHANICAL
⚠201	8-848-387-01	OPTICAL PICK-UP KSS-213BA/S-N

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
202	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M901	X-4949-564-1	MTR MAIN BLK ASSY (CAPSTAN/REEL)	
⚠S501	1-771-308-11	SELECTOR, POWER (MY,SP,HK)	
⚠T501	1-431-697-21	TRANSFORMER, POWER (AEP,UK,EE,CIS)	
⚠T501	1-431-697-31	TRANSFORMER, POWER (US,CND)	
⚠T501	1-431-697-41	TRANSFORMER, POWER (MY,SP,HK)	
Z201	1-803-020-11	DISPLAY PANEL, LIQUID CRYSTAL	
**********			
	**********		
	HARDWARE LIST		
	**********		
* #1	7-683-254-08	SET-SCT, HEX. 5X5 FLAT POINT	
#2	7-682-248-09	SCREW +K 3X8	
#3	7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT	
#4	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#5	7-685-131-19	SCREW +BTP 2.6X4 TYPE2 N-S	
#6	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#7	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#8	7-685-880-09	SCREW +BVTT 4X6 (S)	
* #9	7-627-000-02	SCREW,PRECISION+P M1.7X10 TYPE1	
#10	7-621-255-15	SCREW +P 2X3	
#11	7-627-553-88	SCREW,PRECISION+P 2X7	
#12	7-627-554-28	SCREW,PRECISION+P M2X5 TYPE1	
#13	7-682-546-09	SCREW +B 3X5	

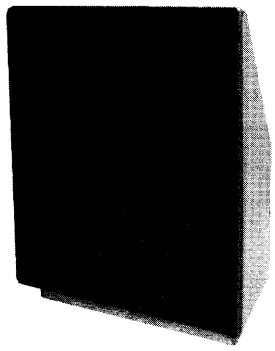
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

SA-ED1

SERVICE MANUAL

Ver 1.1 2001. 06

US Model
Canadian Model
AEP Model
UK Model
E Model



This set is the speaker system in CMT-ED1.

SPECIFICATIONS

Speaker system	Full range, active MFB
Speaker units:	10 cm dia., cone type
Rated impedance	4 ohms
Dimensions (w/h/d)	Approx. 195 x 205 x 120 mm (7 3/4 x 8 1/8 x 4 3/4 in)
Mass	Approx. 1.5 kg (3 lb 7 oz.) net per speaker

Design and specifications are subject to change without notice.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SPEAKER SYSTEM

9-922-707-12
2001F0200-1
© 2001.6

Sony Corporation
Home Audio Company
Shinagawa Tec Service Manual Production Group

SONY

Service Note

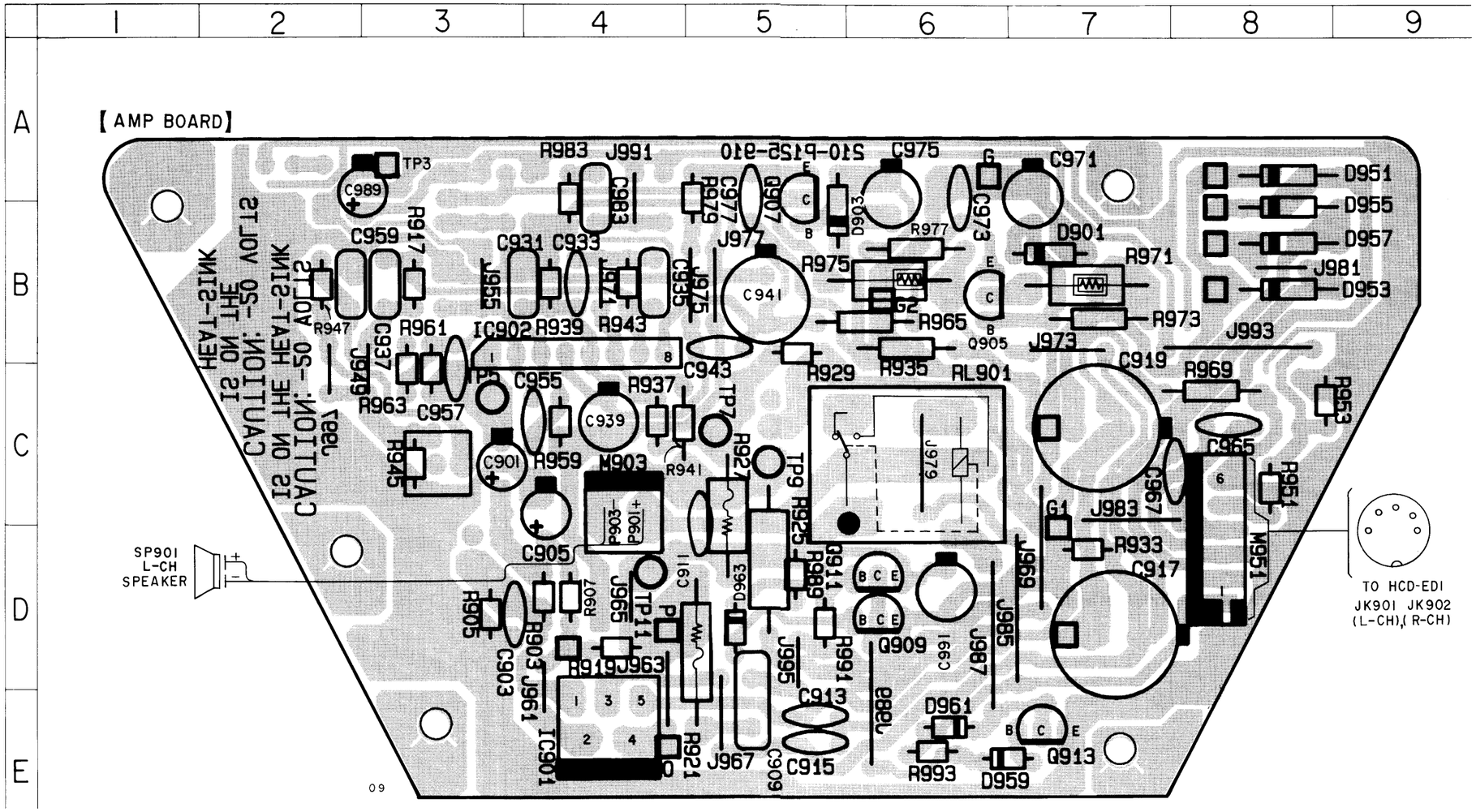
As the power supply is not on-board for this unit, it cannot be operated by itself.
Connect this unit to HCD-ED1 for servicing.
The measurement value of voltage mentioned in this manual is that when this unit is connected to HCD-ED1.

SECTION 1
DIAGRAMS

1-1. PRINTED WIRING BOARD

- **Semiconductor Location**

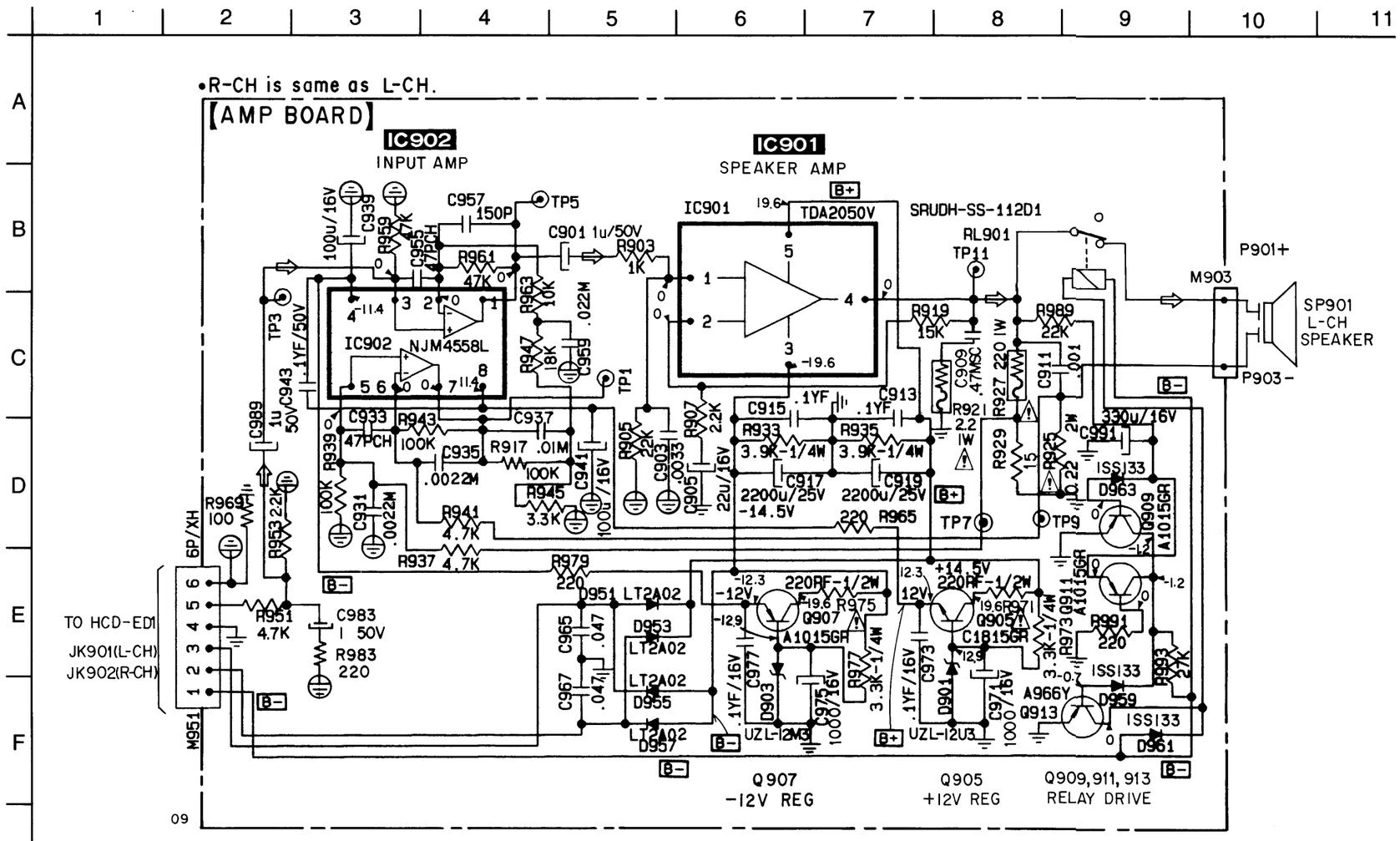
Ref. No.	Location
D901	B-7
D903	B-5
D951	A-8
D953	B-8
D955	B-8
D957	B-8
D959	E-6
D961	E-6
D963	D-5
IC901	E-4
IC902	B-4
Q905	B-6
Q907	A-5
Q909	D-6
Q911	D-6
Q913	E-7



Note:

- ——— : parts extracted from the component side.
- ▒▒▒ : Pattern from the side which enable seeing.

1-2. SCHEMATIC DIAGRAM



Note:

- All capacitors are in μF unless otherwise noted. pF:μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- .XX, .XYF and .XXXMSC mean 0.XXXμF in the constant display of capacitors.
- : fusible resistor
- The name if transistor type is simplified as below:
  2SA1015GR → A1015GR
  2SA966Y → A966Y
  2SC1815GR → C1815GR
- B+ : B+ Line
- B– : B– Line
- Voltage and waveforms are dc with respect to ground under no-signal (deturned) conditions.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Ground (GND) mark
  : Signal GND
  : Power GND
- Signal path.
  : AUDIO

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

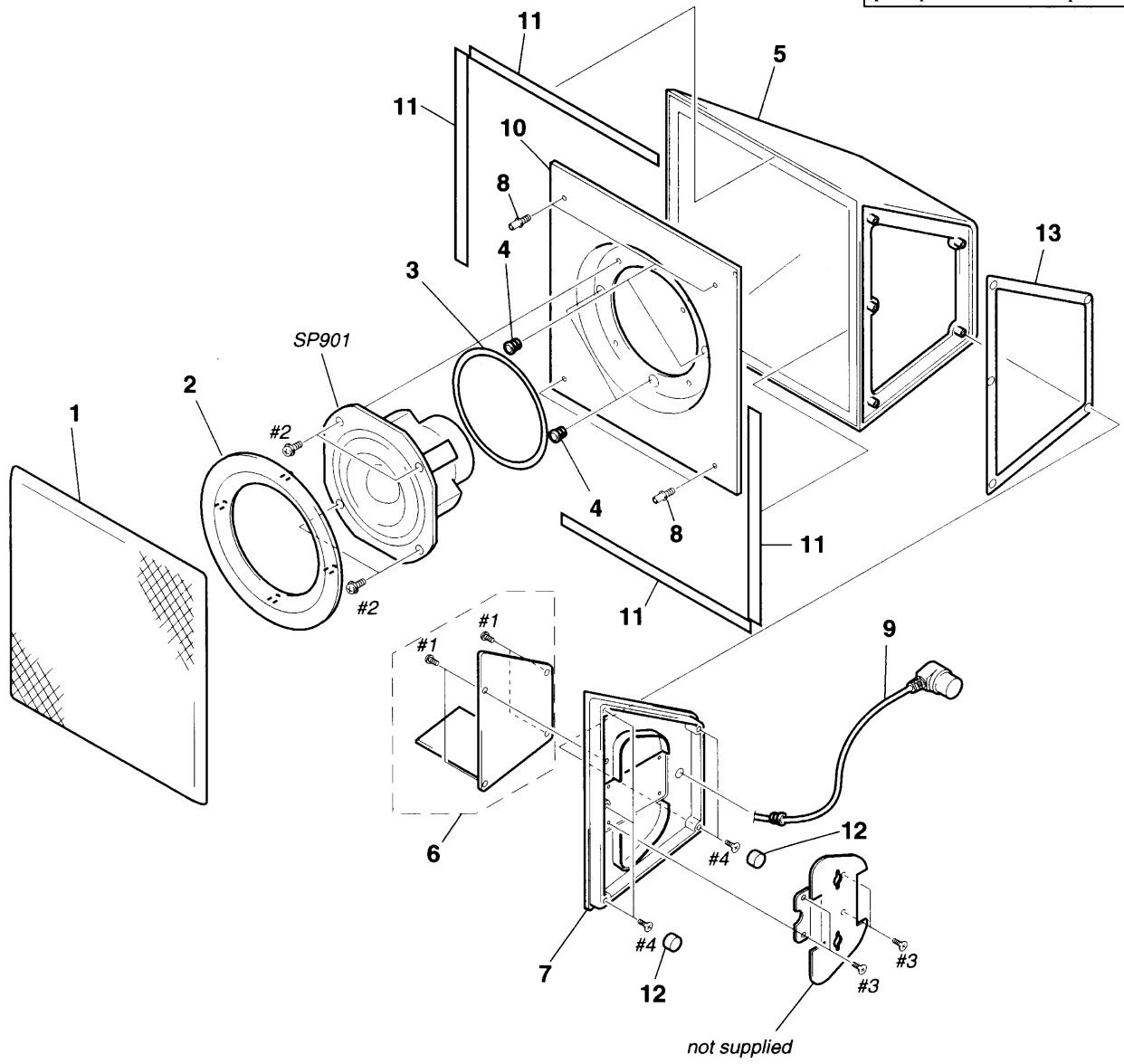
SECTION 2
EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.



Ref. No.	Part No.	Description	Remark
1	4-997-393-01	CLOTH FRAME ASSY (RED)	
2	4-997-389-01	SPK RING	
3	4-997-390-01	EVA PACKING	
4	4-997-391-01	CATCHER	
5	4-997-388-01	SPX BOX	
* 6	A-4407-237-A	AMP BOARD, COMPLETE	
7	4-997-387-01	SPK BTM COVER	
8	4-997-384-01	PIN SCREW	
9	1-783-075-11	CORD, SPEAKER	
* 10	4-997-385-01	SPK BAFFLE	
11	4-997-392-01	EVA PACKING	
12	4-997-394-01	SPK FOOT	
13	4-997-395-01	BTM PACKING	
SP901	1-505-839-11	SPEAKER (10CM)	

SECTION 3
ELECTRICAL PARTS LIST

AMP

Note:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- CAPACITORS
  uF : μ F

Ref. No.	Part No.	Description				Remark
*	A-4407-237-A	AMP BOARD, COMPLETE				
		**********				
	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S				
		< CAPACITOR >				
C901	1-126-964-11	ELECT	10uF	20%	50V	
C903	1-102-123-00	CERAMIC	0.0033uF	10%	50V	
C905	1-127-499-00	ELECT(SOLID)	22uF	20%	16V	
C909	1-136-173-00	FILM	0.47uF	5%	50V	
C911	1-102-074-00	CERAMIC	0.001uF	10%	50V	
C913	1-161-772-11	CERAMIC	0.1uF	10%	25V	
C915	1-161-772-11	CERAMIC	0.1uF	10%	25V	
C917	1-126-943-11	ELECT	2200uF	20%	25V	
C919	1-126-943-11	ELECT	2200uF	20%	25V	
C931	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C933	1-102-852-91	CERAMIC	47PF	5%	50V	
C935	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C937	1-137-364-11	FILM	0.001uF	5%	50V	
C939	1-126-933-11	ELECT	100uF	20%	16V	
C941	1-126-933-11	ELECT	100uF	20%	16V	
C943	1-161-063-00	CERAMIC	0.1uF	10%	50V	
C955	1-102-852-91	CERAMIC	47PF	5%	50V	
C957	1-102-108-00	CERAMIC	150PF	10%	50V	
C959	1-137-372-11	FILM	0.022uF	5%	50V	
C965	1-101-006-00	CERAMIC	0.047uF		50V	
C967	1-101-006-00	CERAMIC	0.047uF		50V	
C971	1-126-926-11	ELECT	1000uF	20%	10V	
C973	1-162-851-11	CERAMIC	0.1uF	10%	16V	
C975	1-126-926-11	ELECT	1000uF	20%	10V	
C977	1-162-851-11	CERAMIC	0.1uF	10%	16V	
C983	1-126-960-11	ELECT	1uF	20%	50V	
C989	1-126-960-11	ELECT	1uF	20%	50V	
C991	1-104-661-91	ELECT	330uF	20%	16V	
		< DIODE >				
D901	8-719-001-76	DIODE UZL-12M3				
D903	8-719-001-76	DIODE UZL-12M3				
D951	8-719-031-53	DIODE LT2A02				
D953	8-719-031-53	DIODE LT2A02				
D955	8-719-031-53	DIODE LT2A02				
D957	8-719-031-53	DIODE LT2A02				
D959	8-719-920-76	DIODE 1S2076				
D961	8-719-920-76	DIODE 1S2076				
D963	8-719-920-76	DIODE 1S2076				

Ref. No.	Part No.	Description				Remark
		< IC >				
IC901	8-759-988-94	IC TDA2050				
IC902	8-759-505-55	IC NJM4558L				
		< CONNECTOR >				
* M951	1-506-947-11	PIN, CONNECTOR 6P				
		< TRANSISTOR >				
Q905	8-729-281-53	TRANSISTOR 2SC1815-GR				
Q907	8-729-201-53	TRANSISTOR 2SA1015-GR				
Q909	8-729-201-53	TRANSISTOR 2SA1015-GR				
Q911	8-729-201-53	TRANSISTOR 2SA1015-GR				
Q913	8-729-200-36	TRANSISTOR 2SA966-Y				
		< RESISTOR >				
R903	1-249-417-11	CARBON	1K	5%	1/4W	F
R905	1-247-863-91	CARBON	22K	5%	1/4W	
R907	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R917	1-249-441-11	CARBON	100K	5%	1/4W	
R919	1-249-431-11	CARBON	15K	5%	1/4W	
⚠R921	1-213-044-61	FUSIBLE	2.2	5%	1W	F
⚠R925	1-216-361-00	METAL OXIDE	0.22	5%	2W	F
⚠R927	1-212-990-61	FUSIBLE	220	5%	1/2W	F
R929	1-249-395-11	CARBON	15	5%	1/4W	F
R933	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R933	1-249-434-11	CARBON	27K	5%	1/4W	
R935	1-249-424-11	CARBON	3.9K	5%	1/4W	F
R937	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R939	1-249-441-11	CARBON	100K	5%	1/4W	
R941	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R943	1-249-441-11	CARBON	100K	5%	1/4W	
R945	1-247-843-11	CARBON	3.3K	5%	1/4W	
R947	1-249-432-11	CARBON	18K	5%	1/4W	
R951	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R953	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R959	1-249-437-11	CARBON	47K	5%	1/4W	
R961	1-249-437-11	CARBON	47K	5%	1/4W	
R963	1-249-429-11	CARBON	10K	5%	1/4W	
R965	1-247-815-91	CARBON	220	5%	1/4W	
R969	1-247-807-31	CARBON	100	5%	1/4W	
⚠R971	1-247-743-11	CARBON	220	5%	1/2W	F
R973	1-247-843-11	CARBON	3.3K	5%	1/4W	
⚠R975	1-247-743-11	CARBON	220	5%	1/2W	F
R977	1-247-843-11	CARBON	3.3K	5%	1/4W	
R979	1-247-815-91	CARBON	220	5%	1/4W	

Ref. No.	Part No.	Description			Remark
R983	1-247-815-91	CARBON	220	5%	1/4W
R989	1-247-863-91	CARBON	22K	5%	1/4W
R991	1-247-815-91	CARBON	220	5%	1/4W
		< RELAY >			
RL901	1-755-243-11	RELAY			

****

MISCELLANEOUS
****

9	1-783-075-11	CORD, SPEAKER
SP901	1-505-839-11	SPEAKER (10cm)

****

****
HARDWARE LIST
****

#1	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S
#2	7-682-562-09	SCREW +B 4X10
#3	7-685-247-14	SCREW +KTP 3X10 TYPE2 NON-SLIT
#4	7-685-249-14	SCREW +KTP 3X14 TYPE2 NON-SLIT

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.1	2001.06	PDF registration.
1.0	1997.09	New.